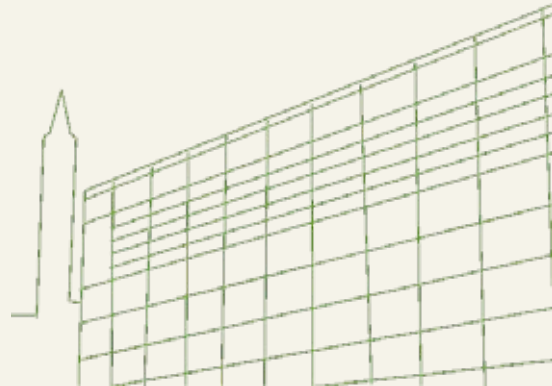




# Marine Geosciences Bachelor



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### Description of the Study Program

The Marine Geosciences focus on natural scientific aspects of the marine environment as part of the Earth System. The aim of marine geoscientists is to understand the composition and processes of seas and oceans as well as of the solid earth and their interactions, in order to be able to contribute to the protection and sustainable development of our habitat. Past geological processes have created our resources and landscape and thus shaped our habitat. They are preserved today as rock formations, fossils or deposits. Processes occurring on the Earth surface and in the oceans also affect human civilisation in many ways: sea-level change and coastal erosion as well as responsible handling and sustainable use of marine resources are serious challenges for the next generations. A special facet of the marine geosciences is study of climate evolution. Knowledge of past climatic conditions is an essential prerequisite for understanding current climate change and forecasting future global consequences.

Building on well-founded basic scientific knowledge, the Bachelor of Marine Geosciences conveys and combines central elements of geology, palaeontology, petrology, geochemistry, geophysics, mineralogy and crystallography with a particular focus on marine sediments and processes and on oceanography. Its concept follows the modern understanding of geosciences: geological processes are understood as components of the overall Earth system and observed, described, analysed and modelled using scientific methods.

The degree program at the University of Bremen covers a broad range of geosciences and focuses on marine topics. Equipped with a broad methodologically trained basic knowledge and in-depth knowledge in three core subjects, graduates of the Bachelor of Science Marine Geosciences can start directly working in the profession or continue studying in a further degree program.

### Admission Criteria and Requirements

The formal admission requirements include:

- a general or subject-related higher education entrance qualification (e.g. Abitur). Information on the assessment of foreign educational qualifications: [www.anabin.de](http://www.anabin.de)

Access routes for those with vocational qualifications without accepted higher education entrance qualification like Abitur are described at [www.uni-bremen.de/StudierenohneAbi](http://www.uni-bremen.de/StudierenohneAbi)

- a proof of **language proficiency in English at level B2** (according to the Common European Framework of Reference for Languages, CEF) or higher unless the higher education entrance qualification was obtained from a school in which the primary language of instruction was English. Information on language certificates accepted as proof of B2-Level can be found at [www.sprachenzentrum-bremen.de/EngZert](http://www.sprachenzentrum-bremen.de/EngZert)
- A proof of **language proficiency in German at level of A1** (according to CEF) or higher unless the higher education entrance qualification was obtained from a school in which the primary language of instruction was German. **At least 1 year of language course attendance** is sufficient as a proof of an A1-Level.

**Information on the applications process for international applicants** can be found at: [www.uni-bremen.de/incomings](http://www.uni-bremen.de/incomings)

**For applicants with a citizenship from Germany, other EU countries, EEA countries or Switzerland** the allocation of places in Bachelor Marine Geosciences takes place via the dialogue-oriented service procedure via the portal [www.hochschulstart.de](http://www.hochschulstart.de). A detailed description of the procedure can be found on the Hochschulstart website. If you have submitted several applications to [www.hochschulstart.de](http://www.hochschulstart.de), you should definitely prioritize your study wishes according to your personal ideas and preferences. When allocating admissions, Hochschulstart will be guided by your prioritized study wishes and will try to make an offer of admission for the higher-priority study wishes.

**Applicants with a citizenship from countries outside the EU and outside other countries mentioned above** and whose educational certificates or university entrance qualifications do not come from Germany have to apply at first for preliminary review documentation (VPD) at uni-assist via the portal [www.uni-assist.de/online](http://www.uni-assist.de/online). You have to apply for the study program of your choice with the VPD via the application portal of the University of Bremen. The portal can be reached at [moin.uni-bremen.de](http://moin.uni-bremen.de). A detailed description of the procedure can be found at [www.uni-bremen.de/en/applications-non-eu](http://www.uni-bremen.de/en/applications-non-eu)

These applicants will need a student visa to enter Germany.

The Bachelor of Marine Geosciences is an open-admission program. There are enough places available - those submitting an application in time and fulfil all requirements will receive a place and be enrolled directly.

At [www.uni-bremen.de/geo-test](http://www.uni-bremen.de/geo-test), prospective students can take part in a self-assessment test specific to the degree program in order to test their individual suitability.

### **Expected Interests and Qualifications**

In addition to a pronounced curiosity for marine geosciences and for the Earth system as a whole, you should have a general interest in scientific issues.

Solid school knowledge in chemistry, mathematics, physics and biology is a basic requirement.

A good knowledge of English is important in order to gain an understanding of the international character and literature of the subject. Possible stays abroad require adaptation to foreign cultures and environmental conditions.

Since computer and information technologies are of great importance in your studies as well as in your profession, you should be open-minded towards this field.

In geosciences, a good spatial imagination and an interest in complex causal relationships are also relevant. For the extensive and varied work in the field and on survey vessels you should enjoy experiencing nature under changeable weather conditions. The ability to develop specialized knowledge independently and the willingness to cooperate in groups are very helpful from the beginning of your studies.

### **Occupational Fields and Master´s programs**

The study program prepares students for a modern and diversified professional practice. Marine geoscientists are active as consultants in marine geoscientific companies, in the offshore industry and in ports, in coastal management, perform a variety of planning and administrative tasks in marine geotechnics, in institutes and authorities. They are active in public relations and media. Employers are energy, construction and transport companies, planning offices and environmental laboratories, authorities, media, educational

and research institutions. In addition to access to the job market, the bachelor's degree also opens up the possibility of gaining further qualifications for science, business or administration in a postgraduate master's program.

The following **master's programs at the University of Bremen** can be taken up after the BSc Marine Geosciences:

- Marine Geosciences
- Marine Microbiology (with specialization subject Paleontology)
- Physical Geography: Environmental History

## Curriculum and Contents of Program

### Degree Curriculum

All courses and examinations are organized in modules, which convey facts and competencies in context and combine different course formats. Modules can only be taken and examined in their entirety. The following plan explains the general course of study:

1. Year	Earth Dynamics (G I)	Mineralogy and Crystallography (G II)	Chemical Principles I	Mathematical Principles I	Physical Principles I
	Evolution of Earth and Life (G III)	Structural Geology and Tectonics (G IV)	Chemical Principles II	Mathematical Principles II	Physical Principles II
2. Year	Oceanography (G V)	Marine Sediments (G VI)	Rock-Forming Processes (G VII)	Applied Geophysics (G VIII)	Sediment Core Project (G IX)
	Specialization 1.1	Specialization 2.1	Specialization 3.1	Excursions/Field Competence	Digital Competencies (GS I)
3. Year	Specialization 1.2	Specialization 2.2	Specialization 3.2	Internship (GS II)	Interdisciplinary Skills (GS III)
	Specialization 1.3	Specialization 2.3	Specialization 3.3	Bachelor's Thesis	

G: Fundamentals, GS: General Studies, CP: Credit Points; each module 6 CP, the Bachelor's Thesis is worth 12 CP.

**Credit points (CP)** are awarded for the successful completion of a module. These are transferable throughout Europe according to the European Credit Transfer System (ECTS) and specify the relative contribution of a module grade to the overall grade.

The credit points indicate the average workload of a student for a module. One CP corresponds to about 30 working hours. In addition to attendance at courses at the university, the working hours also include the preparation and follow-up of the course, e.g. for research and reading, writing a term paper, studying for an exam. With 30 working hours per CP, this results in a load of about 40 hours per week.

On average, about 30 CP should be earned per semester. Deviations of a few CP upwards or downwards are common. A total of 180 CP must be acquired for the 6-semester bachelor's program.

**Modules** are teaching units formed according to content and extending over one or two semesters. These units can be composed of different types of courses, such as lectures, exercises, seminars or practicals.

Modules in Bachelor Marine Geosciences are valued at 6 CP; only the bachelor's thesis module counts for 12 CP. Thus, 180 CP are required for the bachelor's degree after a standard period of study of three years. If necessary, the study program can be extended over a longer period of time.

### **Mandatory Modules**

#### **Mathematical-natural-scientific Fundamentals**

Chemical Principles of Geosciences I and II

Physical Principles of Geosciences I and II

Mathematical Principles of Geosciences I and II

#### **Fundamentals in Marine Geosciences**

G I: Introduction to Earth Dynamics

G II: From Atoms to Minerals – Mineralogy und Crystallography

G III: Evolution of Earth and Life

G IV: Structural Geology and Tectonics

G V: Physical, Chemical and Biological Oceanography

G VI: Geology and Stratigraphy of Marine Sediments

G VII: Rock-Forming Processes

G VIII: Principles of Applied Geophysics

G IX: Multidisciplinary Sediment Core Project

### **Specialization Subjects (compulsory elective)**

Choice of 3 out of 7 specialization subjects (one module each in the 4th, 5th, 6th semesters):

- **Sedimentology:** Sedimentology of Coast and Shelf, Deep Sea Sedimentology, Sedimentary Processes
- **Paleontology:** Introduction to Paleontology and Paleoecology, Marine Micropaleontology, Paleontological Methods
- **Geochemistry:** Geochemical Processes and Isotope Geochemistry, Principles and Methods of Organic Geochemistry, Applied Geochemistry
- **Geoinformatics:** Research Data Management and Analysis, Data Visualization, Earth-System Modeling and Data Analysis
- **Paleoceanography:** Paleoceanography and Environmental Change, Paleoceanography - Core Lab or Field Studies, From Past to Future Ocean Conditions
- **Exploration Geophysics:** Marine Geophysics, Materials Properties and Structural Imaging, Magnetic Exploration
- **Geodynamics:** Geodynamic and Plate Tectonic Principles, Seismology and Geomagnetism, Geodynamic Modelling

### **Excursions**

In addition to field exercises within the modules, further excursions of at least 12 days must be taken (module Geoscientific Field Competence).

### **Bachelor's Thesis**

Nine-week independent research project including written scientific report and final colloquium.

### **Compulsory- and Compulsory Elective Areas**

The compulsory area comprises mathematical and scientific fundamentals and a sound introduction to marine- and geoscientific topics and working techniques. The compulsory elective area with specialization subjects enables students to learn according to their own interests in smaller groups (see degree curriculum).



In the first year of study, the school basics of mathematics, physics and chemistry are expanded and applied in a geoscientific context. Introductory geological courses explain the structure of the earth, its dynamics and rocks, and introduce crystallography and mineralogy. Topics such as the evolution of Earth and life, paleontology and biology as well as structural geology and tectonics complete the picture of the Earth system.

The third semester focuses on the geoscientific disciplines oceanography, marine sediments, rock-forming processes and applied geophysics. From the fourth semester onwards, students specialize in three of the seven elective specializations offered. An essential part of the study program is a comprehensive field and ship-based training, which contributes to a sound understanding of marine geosciences with two introductory excursions on general and structural geological aspects, two regional geological excursions in the Central European region, as well as several field and ship-based exercises within the specialization subjects. Students build up their practical and professional skills in three General Studies modules. The program is completed with a nine-week bachelor's thesis and a colloquium.

### **Specialization Subjects/Major Fields of Study**

The main focus of the study program is aligned with the established fields of research at the Bremen Department of Geosciences and the research institutions in the Bremen area that are involved in teaching.

Bremen has an international reputation in the research of the oceans and ocean floors. The focus is on the dynamics and material balance of the oceans and the reconstruction of past climatic conditions. MARUM and other regional research institutions - the Alfred Wegener Institute for Polar and Marine Research, the Max Planck Institute for Marine Microbiology, the Center for Tropical Marine Ecology, and the Institute *Senckenberg am Meer* - contribute to the high quality and topicality of teaching in Bremen's geoscience programs.

Starting in the 4th semester, students compile their own study profile by choosing three out of the seven specialization subjects Sedimentology, Paleontology, Geochemistry, Geoinformatics, Paleoceanography, Exploration Geophysics, Geodynamics, the last two from BSc Geowissenschaften.

### General Studies and Internship

Three **General Studies** modules include courses to acquire practical and professional abilities, important skills in computer applications, programming, scientific work, and interdisciplinary competences. A first module with specific courses for the acquisition of digital competences introduces students to computer applications, programming and modeling relevant to their profession. In the second module, students can freely select courses worth 6 CP from the extensive range of General Studies courses offered by the University of Bremen in order to profile themselves according to their individual needs and interests. Further information:

[www.uni-bremen.de/en/lehre-studium/designing-study-programs/general-studies](http://www.uni-bremen.de/en/lehre-studium/designing-study-programs/general-studies)

A compulsory four-week **internship** forms the third General Studies module. It is intended to give students an early insight into professional sectors for marine geoscientists. If possible, the internship should be completed during the lecture-free period. It is possible to complete the internship abroad. The successful completion of the internship is documented by a written report and an internship certificate from the employer. Relevant professional activities can be recognized as a professional internship.

### Typical Learning Formats

The range of courses includes lectures, seminars, exercises, practicals, projects, field exercises and excursions as well as ship-based training. Lectures convey the basics of a subject, seminars offer the opportunity to acquire and deepen knowledge interactively in small groups. Exercises, practicals, excursions train methodological skills.

### Language of Instruction

The program is taught completely in English.

Possible Subject Combinations:

Marine Geosciences can only be chosen as a single major subject.

Enrolment in the single major subject bachelor's degree is exclusively in Marine Geosciences; contents of other subjects are integrated into the curriculum of the major.

## **Semester Abroad**

Semesters abroad are possible, usually in the third year of study. Study achievements from your semester abroad are recognized by prior arrangement.

## **Number of Students in the First Semester**

Bachelor Marine Geosciences is a new study program starting in winter semester 2021/22.

## **Faculty**

The faculty is composed of 112 professors and lecturers. A current overview can be found at [www.geo.uni-bremen.de/page.php?pageid=5](http://www.geo.uni-bremen.de/page.php?pageid=5):

18 Professors/Heads of research groups

Research groups: General Geology - Marine Geology, Geochemistry and Hydrogeology, Geodynamics of the Polar Regions, Geophysics – Geodynamics, Geosystem Modelling, Geotechnics, Isotope Geochemistry, Crystallography, Marine Geophysics, Marine Engineering Geology, Marine Technology – Environmental Research, Micropaleontology – Paleoceanography, Mineralogy, Modelling of Sedimentation Processes, Organic Geochemistry, Paleoceanography, Petrology of the Ocean Crust, Sedimentology

21 further professors, 8 Adjunct lecturers, 65 Lecturers

## **Degree**

Bachelor of Science B.Sc.

## Start of the Study program, Lecture period and Duration of Study

Start of the Study Program: each winter semester

Duration of Study: Bachelor Marine Geosciences is a three-year course, composed of six semesters and includes 180 CP

BAföG funding is based on this standard period of study.

### Winter semester 2021/2022

Lecture period: October 18, 2021 – February 4, 2022

Holidays: December 23, 2021 – January 5, 2022

### Summer semester 2022

Lecture period: April 19, 2022 – July 22, 2022 Please note that many exams are taken during the first weeks of the lecture-free period after the end of the course period.

## Uni-Start-Portal - All Information for a Good Start to Your Studies

Before the start of the winter semester, the University of Bremen organizes an annual **orientation week** at the beginning of October, during which contact persons from the various subjects help you prepare your timetable, explain university terms and introduce themselves to the service facilities. In order to make it easier for you to start your studies, there are many additional support services from mid-September until the first semester (e.g. preliminary courses in mathematics, programming, introduction to research-based learning).

As part of Uni-Start, the Department of Earth Sciences is organizing the workshop "Vom Kies zum Kontinent – eine erste Begegnung mit den Geowissenschaften". During this three-day project, first-year students come into contact with young geoscientists, teachers and graduates. Starting from a real geological context, which is presented at the beginning of the workshop, the participants run through all phases of a classical research process. Furthermore, the participants will get an idea of different professional fields in geoscience. The workshop is aimed at students who have already enrolled in their degree program. It complements the general introductory offers and the orientation week from a subject-related and methodological perspective.

For later participation in courses in the laboratory, it is necessary to take part in the **safety and fire protection instruction** offered during the orientation week.

From the end of July, you will find all the offers and other helpful tips for starting your studies on the Unistart portal: [www.uni-bremen.de/unistart](http://www.uni-bremen.de/unistart)

### **Fees and Accommodation**

The **semester fee** for the winter semester 20/21 was 386.39 Euro. It includes the use of public transport in Bremen and the region around. For current information see [www.uni-bremen.de/semester-contribution](http://www.uni-bremen.de/semester-contribution)

In addition to the usual study costs for teaching materials, there are also **costs for field exercises** (including the necessary weatherproof clothing) when studying geosciences. As a rule, students have to calculate with an own contribution of about 300-600 € per year (approximate guideline!).

General information about the city of Bremen and rental accommodation can be found at [www.bremen.de](http://www.bremen.de) and [www.uni-bremen.de/accommodation](http://www.uni-bremen.de/accommodation). Students moving to Bremen receive 150 Euro as a **welcome payment**.

For information on study finance and jobs see [www.uni-bremen.de/student-finances](http://www.uni-bremen.de/student-finances)

**Information for international students concerning visa, health insurance and finances** can be found at [www.uni-bremen.de/studentstatus](http://www.uni-bremen.de/studentstatus)

## **Admission and Application**

### **Application closing date (first semester)**

Winter semester: **July 31, 2021**

### **Application closing date (only advanced: second semester)**

Summer semester: January 15, 2022

For the summer semester, only applications from advanced applicants will be considered. Enrollment as a beginner is not possible!

### **Student 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

Visiting hours (currently only by phone), check website for any changes:  
Mo, Tue & Thu 9–12 a.m., Wed 14–16 p.m.

phone: +49 (0)421 218-61110,  
contact form: [www.uni-bremen.de/KontaktSfS](http://www.uni-bremen.de/KontaktSfS)  
[sfs@uni-bremen.de](mailto:sfs@uni-bremen.de)  
[www.uni-bremen.de/sfs](http://www.uni-bremen.de/sfs)

### **Master and international applicants**

phone: +49 (0)421 218-61002 Fax: +49 (0)421 218-61125,  
contact form: [www.uni-bremen.de/KontaktSfS](http://www.uni-bremen.de/KontaktSfS),  
[master@uni-bremen.de](mailto:master@uni-bremen.de)  
[www.uni-bremen.de/sfsi](http://www.uni-bremen.de/sfsi), [www.uni-bremen.de/master](http://www.uni-bremen.de/master)

## **Contact and Advisory Services**

### **Internet address of the study program**

[www.geo.uni-bremen.de/](http://www.geo.uni-bremen.de/)

### **Consultancy for Study Affairs and Career Perspectives**

Contact point for questions on study content, study planning and examination regulations. Advises and supports students in all matters surrounding the preparation, planning and implementation of practice elements during studies as well as career perspectives.

Dr. Ulrike Wolf-Brozio/Dr. Barbara Ventura

GEO, Room 1330/1350

+49 (0)421 218-65004/-65005

[studfb5@uni-bremen.de](mailto:studfb5@uni-bremen.de)

### **Departmental Counseling**

Advice on questions about study design, examinations as well as examination regulations and possible priorities in studies

Deans of Studies/Program Coordinator

[studiendekan-fb5@uni-bremen.de](mailto:studiendekan-fb5@uni-bremen.de)

### **Examination Office**

Stefan Siemers

GEO, Room 1180

+49 (0)421 218-65013

[siemerss@uni-bremen.de](mailto:siemerss@uni-bremen.de),

Office hours: Tuesday 1–3 pm, Thursday 9–11 am

### **Internship Coordinator**

Supervises and accepts internships

Prof. Dr. Tobias Moerz

MARUM 1, Room 2210

+49 (0)421 218-65840

[tmoerz@uni-bremen.de](mailto:tmoerz@uni-bremen.de)

**University Services**

[www.uni-bremen.de/consultation](http://www.uni-bremen.de/consultation)

**Service and Information for International Students**

(accommodation, jobs, finances, language learning)

[www.uni-bremen.de/offers-international-students](http://www.uni-bremen.de/offers-international-students)

**Information and Advice on Visa Matters and Social Security**

[www.innerremission-bremen.de/beratungen/internationale\\_studierende/](http://www.innerremission-bremen.de/beratungen/internationale_studierende/)

[www.uni-bremen.de/en/bsu/residence-permits](http://www.uni-bremen.de/en/bsu/residence-permits)

**Student Representatives**

**Student Body of the Faculty**

[stuga@geo.uni-bremen.de](mailto:stuga@geo.uni-bremen.de)

**Student Representatives for the Whole University**

**AStA Students' Union**

Services include: Advice on BAföG student grants, social counseling, and childcare

AStA-Etage, Studentenhaus (StH)

[www.asta.uni-bremen.de/asta-services](http://www.asta.uni-bremen.de/asta-services)



# KONTAKT

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## Zentrale Studienberatung

Besuchsadresse:

Bibliothekstr. 1, Verwaltungsgebäude VWG,  
Haupteingang, Erdgeschoss, Flur links

Postadresse:

Universität Bremen  
Zentrale Studienberatung  
Postfach 33 04 40  
28334 Bremen

0421 218-61160

[zsb@uni-bremen.de](mailto:zsb@uni-bremen.de)

[www.zsb.uni-bremen.de](http://www.zsb.uni-bremen.de)

Beratungszeiten (ohne Voranmeldung):

Mo, Di & Do 9–12 Uhr

Mi 14 –16 Uhr

Zusätzliche Termine für Berufstätige und Auswärtige  
nach Vereinbarung