

Marine Geosciences

International Bachelor's program at the University of Bremen

Exploration Geophysics
Geochemistry
Geodynamics
Geoinformatics

Paleoceanography
Paleontology
Sedimentology

In Brief:

Degree: Bachelor of Science (B.Sc.) Marine Geosciences

Duration: 3 years

Admission requirements:
general higher education
entrance qualification

English proficiency B2
German proficiency A1

Teaching language: English

Application deadline: July 15

Program start: October

Program

The program BSc Marine Geosciences represents the first career step in geosciences within the scientific focus on marine, polar and climate research at the University of Bremen.

Building on a profound basic education in natural sciences and geosciences in the first three semesters, the interdisciplinary course of study offers a selection of 7 different specialisations from the 4th semester onwards. Students can compile their professional profile by choosing between various marine geoscientific disciplines. In four complementary modules (General Studies), students expand their practical and professional skills. The course ends with the bachelor thesis, and its defence at the end of the 6th semester.



Prospects

- consulting activities in geoscientific companies
- exploration and exploitation of resources off-shore or at sea
- free-lancer for geoscientific companies
- activities for off-shore industry and harbours
- coastal management (water management, monitoring of sediment movements, coastal protection, etc.)
- activities in marine geotechnics
- public relations
- geoscientific activities in local and state authorities



Marine Geosciences at the University of Bremen

Research in marine geosciences has a long tradition in Bremen and constitutes the main focus at the Department of Geosciences. All aspects of marine geosciences are covered, from sedimentology to petrology, from geophysics to biogeochemistry, from basic research to applied technology.

With establishment of the MARUM, Center for Marine Environmental Sciences, the University of Bremen created a leading international institute for planning and carrying out interdisciplinary marine science. The studies within MARUM focus on the three research areas »Ocean and Climate«, »Geosphere-Biosphere Interactions« and »Sediment Dynamics«. The multidisciplinary nature of marine geoscientific research and the application of up-to-date scientific instruments play an important role in teaching methods and topics.



MARINE GEOSCIENCES

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Program Structure

BSc Marine Geosciences University of Bremen, FB 5

	6 CP	6 CP	6 CP	6 CP	6 CP
1. Year WiSe	Introduction Earth Dynamics Introduction Earth sciences Minerals + rocks Field trip 1	From Atoms to Minerals From atoms to minerals - L From atoms to minerals - E	Chemical Principles I General chemistry General chemistry exercise	Physical Principles I Physics for natural sciences I Physics of the solid Earth I	Mathematical Principles Mathematical principles for geosciences I
1. Year SuSe	Evolution of Earth and Life Earth and life history Basics biology Introduction to fossils	Struct Geology + Tectonics Structural geology Geol mapping Field trip 2	Chemical Principles II Introduction to geochemistry Chemistry lab practise	Physical Principles II Physics for natural sciences II Physics of the solid Earth II	Mathematical Principles Mathematical principles for geosciences II
2. Year WiSe	Ph, Ch, Biol Oceanography Climate and Ocean	Marine Sediments Intro marine geology Ship-based survey sediments Stratigraphy marine sediments	Dynamics of Ocean Crust	Princ Applied Geophysics Fund applied geophysics Geophysical field exercise	Sediment Core Project Sediment core project
2. Year SuSe	Core field MarGeo 1 Core fields (choose 3 out of 5) Sedimentology Geochemistry	Core field MarGeo 2 Paleontology Paleoceanography	Core field MarGeo 3 Geoinformatics	Geoscientific Competences 2x 7 day field camps	General Studies 1 Digital competences e.g. GIS, GMT, Matlab, etc.
3. Year WiSe	Core field MarGeo 1 or choose 1 core field from BSc Geosciences Exploration Geophysics	Core field MarGeo 2 Geodynamics	Core field MarGeo 3	General Studies 2 Professional competences 6 week internship	General Studies 3 Interdisciplinary skills e.g. soft skills, language, economics, etc.
3. Year SuSe	Core field MarGeo 1	Core field MarGeo 2	Core field MarGeo 3	Bachelor thesis + defense	

An essential part of the program is a basic field training, which contributes significantly to a profound knowledge of geoscientific field work with two excursions on general and structural geological aspects, two regional geological excursions in the Central European area as well as several field exercises linked to the specialization subjects. In addition, the module "Marine Sediments" includes an excursion with the research vessel ALKOR as an introduction to marine geological working techniques on board. Processing of sediment archives will be carried out in the project course "Sediment Core Project". Digital skills and important key qualifications are taught in separate modules in the study section 'Practical and Professional Competences in Geosciences'. Alternatively, students can also choose suitable courses from the University's General-Studies program to individually compile their own soft-skill portfolio, e.g. German language courses. A six-week professional internship is obligatory, which can also be completed at a non-university research institute.

Application in two steps

1. at "Stiftung für Hochschulzulassung":
www.hochschulstart.de
2. with received BID and BAN only online from May to July 15:
<https://moin.uni-bremen.de/>

Application documents: High school diploma, CV, language certificates (if German or English is your mother tongue or you graduated from school with German/English as the teaching language you do not need to prove this language proficiency).

You are from outside the EU? Please contact uni-assist first: <https://ww2.uni-assist.de/online/>

Requirements

- general higher education entrance qualification
- English proficiency B 2 & German proficiency A 1
- very good command of natural science
- capability to think in four dimensions
- ability to work both independently and in teams
- willingness to participate in strenuous field courses
- intercultural competences

Information

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