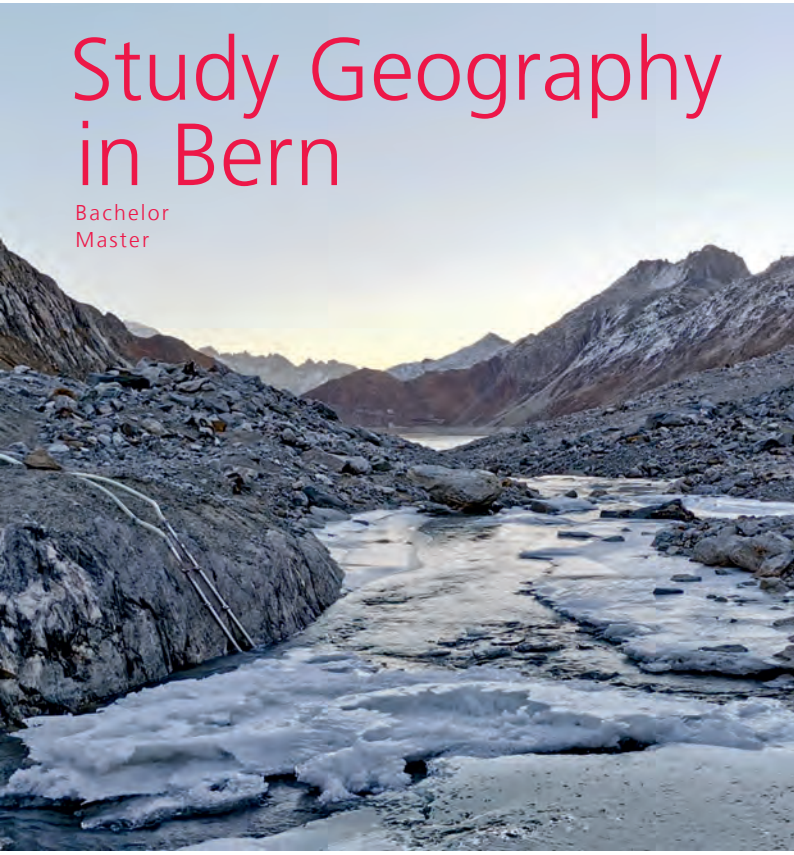
UNIVERSITÄT
BERN

Study Geography in Bern

Bachelor
Master



Study Geography in Bern

Geography focuses on the multifaceted relationships between humans and space. At the Institute of Geography, we conduct interdisciplinary research, combining approaches and methods from the natural, social and economic sciences. We investigate the complex challenges of our time, such as climate change, land degradation, natural hazards, urban sprawl, uneven regional development, North-South conflicts, and the consequences of globalization. And we don't just study the challenges, we work to develop solutions.

The Institute of Geography in Bern is comprised of three departments, each of which have a diversity of units and research groups:

Physiscal Geography – explores landscape structures and the material cycles between soil, water, and air.

Geographies of Sustainability – examines current trends and debates in sustainable development, and analyzes the interactions within and between bio-physical and socio-economic structures.

Human Geography – studies the relationship between society and space, with a focus on the relationships between society, economy, politics, and the environment.

All departments are networked nationally and internationally. The Institute of Geography is also involved in the research of the Oeschger Centre for Climate Change Research (OCCR), the Centre for Development and Environment (CDE), the Wyss Academy for Nature and Sustainable Development, the Mobiliar Lab for Natural Risks and the Center for Regional Economic Development (CRED).

Photo front page: L. Binkert

Liesberg (BL) 2019 – Sampling soils in a corn field naturally contaminated with arsenic.

Photo: L. Stanisic

Units

Soil Science

We study the biogeochemistry of soils under climate change and other global changes. Our research focuses on the interactions and material fluxes between soils and the atmosphere, living organisms, groundwater, and surface water. Our goal is to improve environmental health and food production.


Photo: A. Mestrot

Geomorphology

To better understand the risk of natural hazards, we analyze geomorphological processes such as mudflows and sediment transport, e. g. in the case of a flood. Through interdisciplinary cooperation, we investigate the interactions between societies and environmental hazards, as well as ecology. This groundwork allows us to explore new options for risk management.


Photo: M. Vollmer

Paleolimnology

We use a range of biogeochemical techniques to investigate how lakes have responded to past and current climate and environmental changes. We analyse how micro-pollutants move across different compartment of the environment, how they are transformed, and we assess eco-toxicological risks. The work is mainly experimental, based on analytical lab methods and statistical data analysis.


Photo: M. Grosjean

Hydrology

We study and model how climate and human impacts affect our water resources. Hydrologic processes are analyzed using fieldwork, GIS analyses, and statistical evaluations. The development of new hydrological models allows us, for example, to improve the forecasting of floods and the assessment of available water resources for energy production.


Photo: L. Binkert

Climatology

Through international collaboration, we use data analysis and numerical models to study large-scale climate and weather variability. We investigate the influence of natural external factors (such as volcanic eruptions) and humans on weather and climate over the past 100 – 400 years. We also analyze the temporal accumulation and spatial concentration of extreme weather events (e. g., hailstorms and heavy precipitation).


Photo: M. Mattou

Geocomputation and Earth Observation

We use diverse Earth observation data and models to detect, understand, and predict processes of vegetation, land use, and climate impacts on terrestrial ecosystems and the carbon cycle. The increasing wealth of data and methods in data science holds great potential for new scientific insights and is central to our research and teaching.

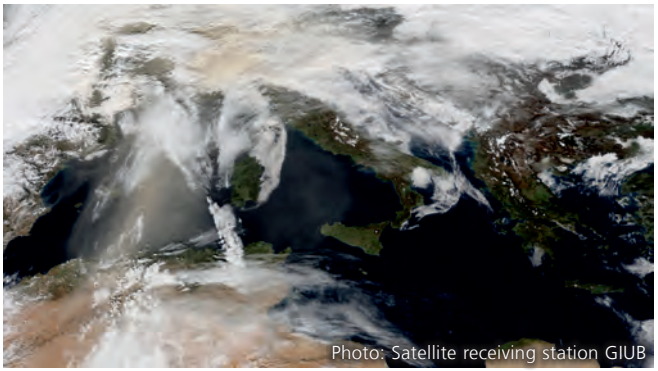


Photo: Satellite receiving station GIUB

Units

Land Systems and Sustainable Land Management

We study the state of land resources (e. g., soil, water, vegetation) and their interrelationships with the natural environment and human use. In collaboration with societal stakeholders, we analyze how land use and land management can be improved to sustain natural processes and biodiversity in the long term.

Photo: C. Ifejika Speranza

Critical Sustainability Studies

We are committed to debates on sustainability guided by social theory, taking into account critical perspectives on power relations, justice, and emancipation. Thematically, we focus on the multiple multiscale and translocal aspects of work, education, migration, and (im)mobility. In doing so, we work inter- and transdisciplinarily as well as in our media lab (mLAB).

Photo: S. Thieme

Units

Social- and Cultural Geography

Social geography studies forms of power that lead to social and spatial inequality and oppression. In our research group, we are particularly interested in how processes of globalization affect our lives down to the most private spheres of love, care, and reproduction.

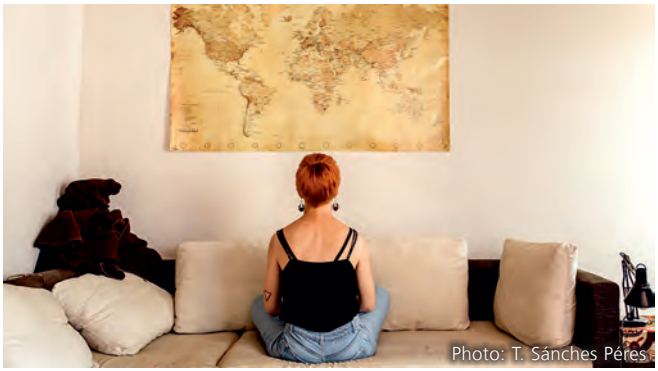


Photo: T. Sánches Péres

Economic Geography

We analyze how cities or regions change while remaining economically competitive and maintaining their sustainability. Our research focuses on the development of businesses and industries. As an example, we investigate how digitalization affects the economic attractiveness of mountain regions or how regions become growth-independent.

Photo: H. Mayer

Political Urbanism and Sustainable Spatial Development

We analyze the socio-political dimensions of spatial development and explore questions of how and why resources (e. g., land) are regulated; how actors secure their access to resources; and what institutions ("rules of the game") promote strong sustainability. In particular, we want to understand how land use planning can combat urban sprawl or help increase affordable housing.

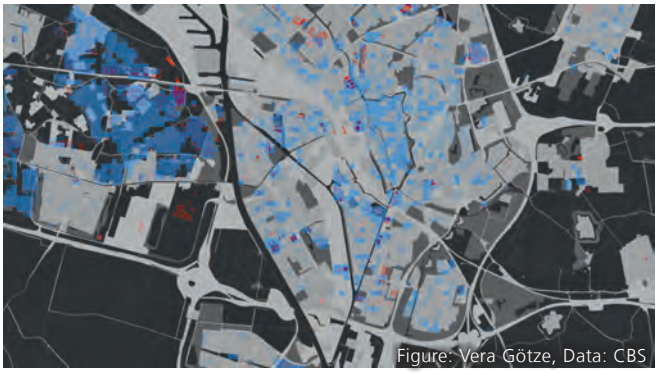


Figure: Vera Götze, Data: CBS

Oberhasli (BE) 2021 – Through the process of photogrammetry, drone imagery can provide the basis for creating a high-resolution, undistorted, and true-to-scale orthophoto, as well as for creating an elevation model.

Photo: J. Baumgartner

Toolbox

The diversity of methods and media used and combined in geographic research is a strength of the discipline.


Figure: S. Eckert

GIS
Geographic Information Systems (GIS) are used to capture, edit, and organize digital spatial data. This allows spatial issues and processes to be analyzed, modeled, and visualized.


Photo: S. Wunderle

Remote Sensing
Satellite data are used in real-time but also for studies of temporal changes. They are therefore indispensable for deriving information about the Earth's surface, oceans and atmosphere.

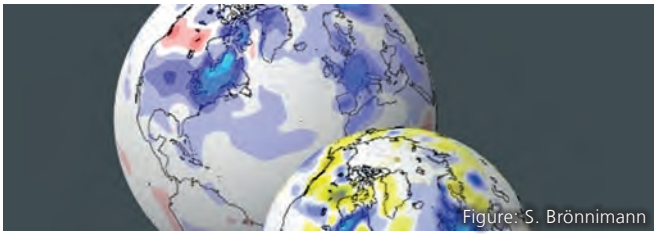


Figure: S. Brönnimann

Quantitative Methods
Statistical methods are employed in geography to analyze quantitative data and calculate models.


Source: pixabay

Qualitative Methods
Qualitative methods complement quantitative representations by providing access to the socio-spatial world as it is experienced and shaped by people.

Toolbox


Photo: L. Hudritsch

Laboratory
The equipment of our state-of-the-art laboratory enables research on an international level. Here, for example, soil samples are analyzed for heavy metals.


Figure: M. Winkel

mLab
In mLab, we experiment with new media, digital technologies, and artistic ways of working as part of research and science communication and learn to critically question them.


Figure: P. Leiser

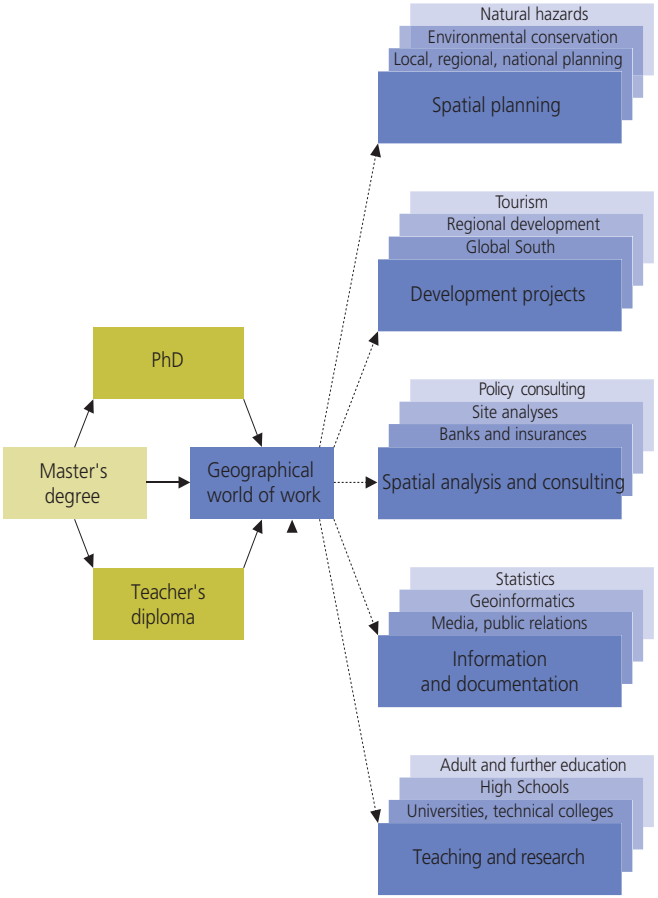
eLab
Electronic devices help translate physical processes into quantitative observations, for example temperature, water nutrients, or atmospheric gas concentrations. Our newly equipped electronics lab means makes it possible to build our own measurement devices that our custom tailored and programmed for our research.


Photo: B. Schaefli

Field Work
Field measurement and work takes many forms in geography, but throughout the discipline, the world is our laboratory and we are regularly out in the environment, ranging from mountains to sea and urban to remote, to observe, measure, and investigate.

Career Prospects

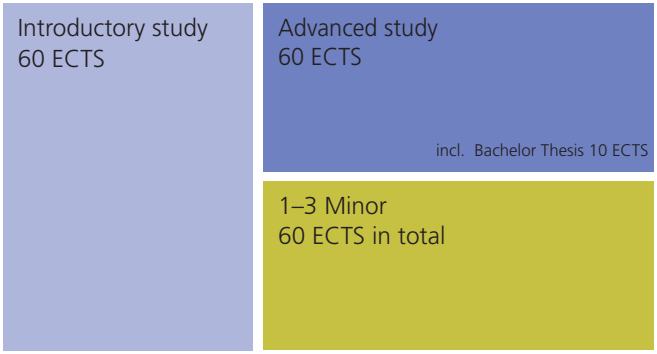
Due to their broad basic education and applied methodological as well as theoretical knowledge, geography graduates are in demand on the job market. Thanks to their versatile competencies, they can master complex problems and mediate between disciplines. The in-depth studies within the scope of the master thesis and the chosen minor study programs further shape a graduate's career perspectives.



Study Programs

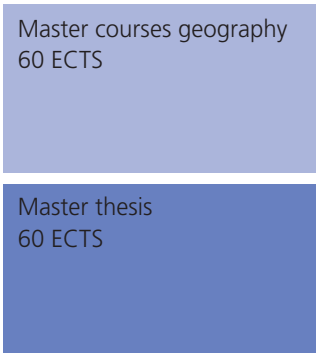
In addition to knowledge specific to the units presented above, students in the Bachelor's program acquire basic knowledge in earth sciences, mathematics, statistics, and programming for natural sciences. They also learn to critically question scientific work.

Bachelor Major 180 ECTS

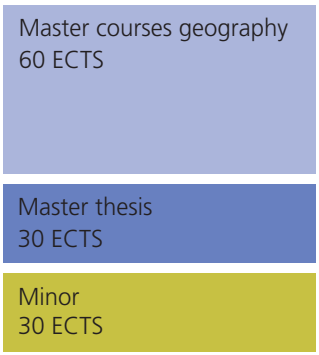


In the master's program, the focus is on the individual deepening of scientific knowledge and the writing of the master's thesis. Master courses are partly held in English.

Mono Master 120 ECTS



Master Major 120 ECTS



Looking for detailed information about the study programs?

Want to study geography in Bern? Scan me to apply.

Scan me to visit the website of the Institute of Geography at the University of Bern.

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