

## MASTER'S PROGRAMME ESS

**Standard period of study** 2 years (4 semesters)

### Degree

Master of Science (M.Sc.)

### Contents of the Programme

In the course of their studies, students complete 17 modules and the Master's thesis. The acquisition of theoretical knowledge is combined with practical exercises including field measurements.

14 compulsory modules are dedicated to acquiring basic skills in and fundamental knowledge of Earth System Science. For instance, in these modules, students study feedback mechanisms over the land surface by operating and analysing soil-vegetation-atmosphere models as well as agricultural and economic models.

Especially innovative components of the programme are:

- The debate seminar in the 3<sup>rd</sup> semester
- Training in data assimilation as a key technology in weather forecasting, climate simulations and reanalyses of regional climate
- Operation and analyses of regional climate models
- Application of remote sensing for Earth system observations
- The synthesis of aspects of natural science with economic models

Students have the opportunity to deepen their knowledge in various fields of research with the help of three specialisation modules which take place in the 2<sup>nd</sup> and 3<sup>rd</sup> semester.

### Module Catalogue

<https://www.uni-hohenheim.de/module-catalogue/esw-2>

### Master's Studies in Hohenheim

<https://master.uni-hohenheim.de/home>

## CONTACT & LINKS

**University of Hohenheim  
Student Counselling Center  
70593 Stuttgart  
Tel. +49 (0) 711 459-22064**

**Contact:**  
[zsb@zentrale.uni-hohenheim.de](mailto:zsb@zentrale.uni-hohenheim.de)

**Website of the Master's Programme ESS**  
[www.earth-system-science.de](http://www.earth-system-science.de)

**Academic counsellors for Earth System Science**  
Prof. Dr. Volker Wulfmeyer | Tel. +49 (0) 711 459-22160  
Dr. Andreas Behrendt | Tel. +49 (0) 711 459-22160  
[counselling-ess@uni-hohenheim.de](mailto:counselling-ess@uni-hohenheim.de)

**■ Application**  
Beginning of the programme:  
for the first semester - winter semester only  
for higher semesters - winter and summer semester  
For more details, see [www.uni-hohenheim.de/ess](http://www.uni-hohenheim.de/ess)

Deadline for all applications for the first semester: May 15th  
Post-deadline applications are accepted if not all places are filled.  
For deadlines for the summer semester, see weblink above.



## UNIVERSITY OF HOHENHEIM

FACULTY OF NATURAL SCIENCES



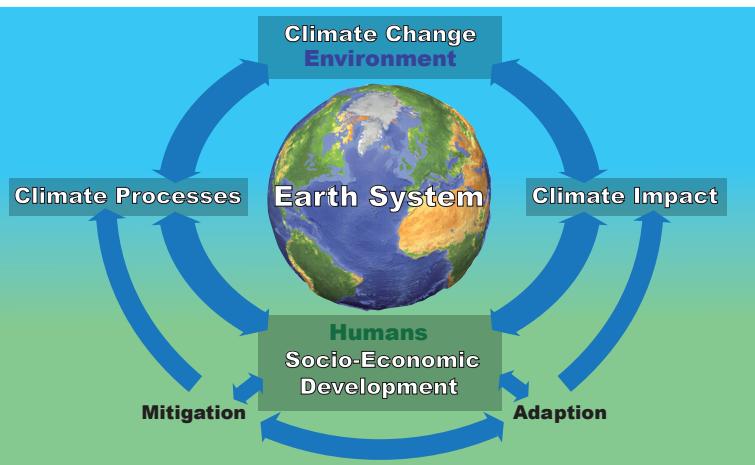
## Master of Science Earth System Science

Natural Sciences in Hohenheim



## THE MASTER'S PROGRAMME ESS

Processes in the Earth's environment occur within a complex framework. Population growth, climate change, land use as well as food production and food security all play a vital part. The programme in Earth System Science is both interdisciplinary and research-oriented. Aspects of natural sciences are linked to topics in the agricultural and business sciences. The students acquire an understanding of the key processes in the Earth system including human activities. They are able to assess the Earth system's current status through the analysis of various indicators. The graduates are able to simulate Earth system components (e.g. the regional climate) particularly over the land surface with a focus on land use and land management as well as agricultural activities. This fundamental knowledge is essential for end users and decision makers in the era of climate change. The master's programme "Earth System Science" was conceived at the University of Hohenheim in order to accommodate such wide-ranging and complex demands. It is the only one of its kind in Germany. The course of study is coordinated and coupled with ongoing international programmes in the field of weather, climate and Earth system research.

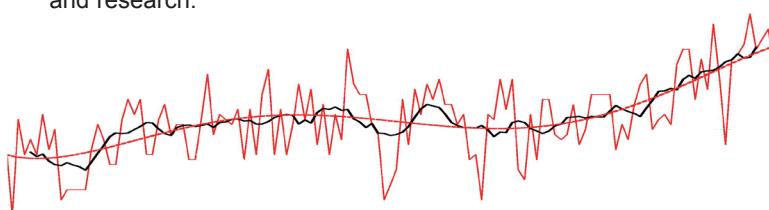


## MOTIVATION

In the era of climate change, the understanding of the Earth system is of fundamental importance. Its components are interacting in a fascinating and complex way; the system is more than the sum of its pieces. Particularly important for society and economy are the processes over the land surface. Feedbacks in the soil-vegetation-atmosphere system determine in a crucial way the development of extreme weather events as well as the status and changes of the regional climate. Understanding of the effects of land-use changes and agricultural management in different climate regions are critical for yield, yield quality, and thus food security. This requires coupling of regional climate models with agricultural and economic models providing a broader view of the Earth system.



In the future, graduates educated on these areas will become the experts in developing concepts of sustainability aimed at protecting the Earth environment, for steering its development and for providing guidances for the general public, end users and decision makers. The University of Hohenheim has an excellent long-term record concerning corresponding education and research.



## CAREER PERSPECTIVES

The graduates are able to make their own contributions to Earth system analyses and research as well as to ecologically-sustainable developments in society. They stand out through their interdisciplinary thinking and flexibility when it comes to applying scientific methodologies in their project work. They are capable of objectively assessing their own methods and results and presenting them factually and clearly. Career perspectives are foreseen in the following areas:

- Research activities in the field of Earth System Science (meteorology, environmental physics, geoscience, etc.)
- Consultancy in the public service, private business sector, and non-governmental organisations
- Occupations in international and bilateral organisations working in the field of development assistance
- Science writing



## Hohenheim

The University of Hohenheim campus lies in the south of Stuttgart. The extensive grounds of the Hohenheim Gardens, as well as its research and training facilities, make the grounds of the University one of the most attractive campus universities of Germany. Every lecture room can be reached within a couple of minutes on foot.