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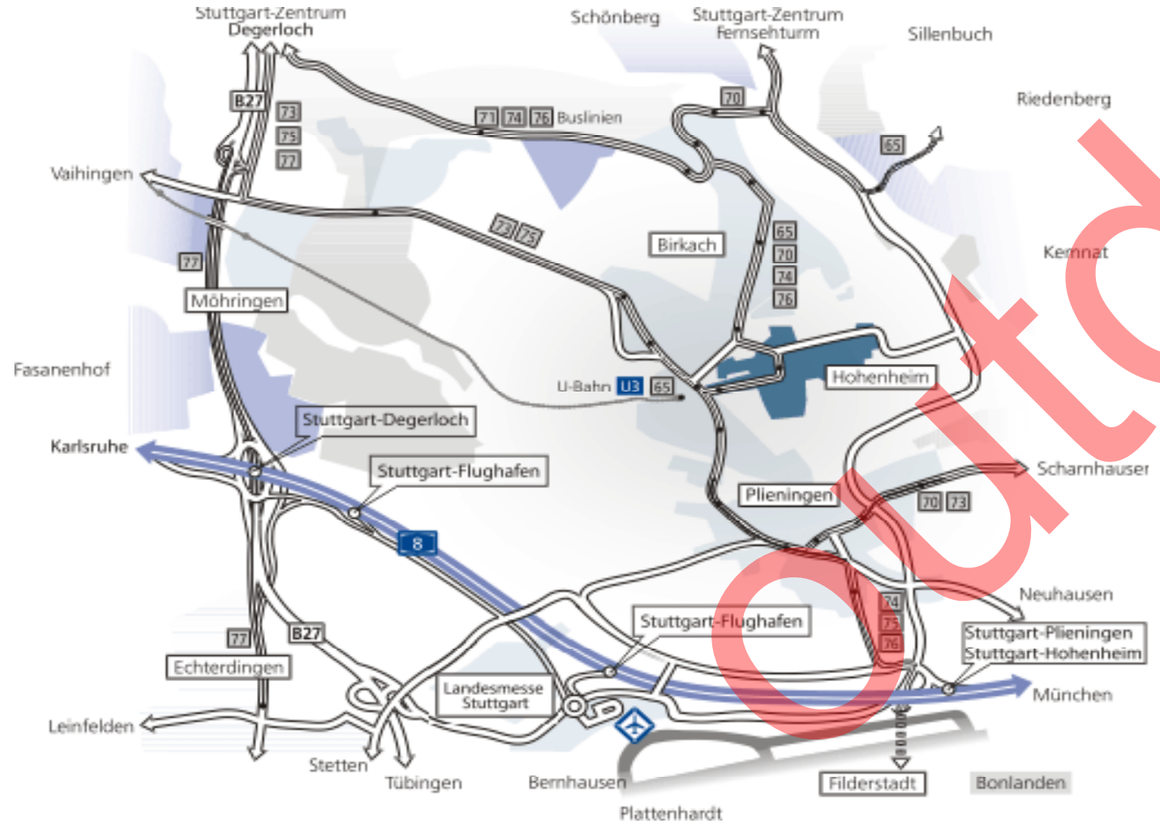
Location of the University

The University of Hohenheim is located to the south of the city of Stuttgart, directly beside the airport and the new trade fair center. The University is ca. 10 minutes away from the Stuttgart city center and can be reached within 30 minutes by means of public transport.



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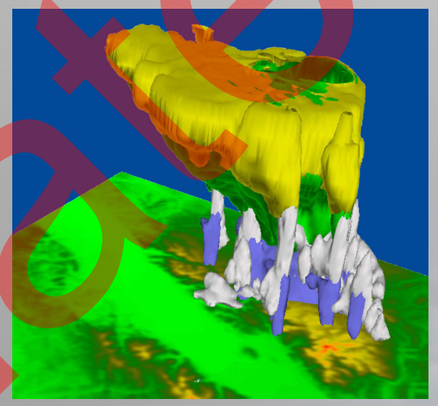
UNIVERSITY OF HOHENHEIM
FACULTY OF NATURAL SCIENCES

Earth System Science

Master of Science



Curriculum

August 2013

Dear students

This study guide offers an overview of the Master's programme in Earth System Science. It contains all pertinent information concerning your studies in brief, as well as references to more detailed information.

Please keep in mind that all information in this guide may be subject to change. For the latest updates please visit the website of the University of Hohenheim at **www.uni-hohenheim.de**.

Answers to specific questions concerning the rules and regulations of the programme can be found in the examination regulations at **www.uni-hohenheim.de/examination-regulations**.

We hope you enjoy your stay at the University of Hohenheim and wish you all the best for your studies!

The Dean's Office of the Faculty of Natural Sciences &

The Study Counsellors of Earth System Science

Contents

Final degree

Master of Science (M.Sc.)

Prescribed period of study

4 semesters, compulsory attendance; 120 ECTS credits

Language of instruction

The language of instruction is English.

Lecture period

The lecture period lasts for 14 weeks each semester.

The semester dates for the respective academic year may be found on the last page of this curriculum.

Aims of the study programme

In the era of climate change, the understanding of the Earth system is of fundamental importance. Its components are interacting in a complex way. The Master's programme in Earth System Science is both interdisciplinary and research-oriented. It requires the study of key processes of the Earth system, including human activities, food security and climate change. Thus, aspects of the natural sciences are linked to topics in the agricultural and social sciences. The focus of this programme lies on the understanding and the simulation of Earth system components, such as the regional climate, particularly over the land surface, land use and land management as well as agricultural activities. The study programme in Earth System Science conveys the following key skills and competencies.

As a graduate of this programme, you will have acquired a comprehensive understanding of the Earth as a system. You know of the importance of an intact Earth system to humanity and are aware of the various ways in which human behaviour influences this system. You are able to determine and assess the Earth system's current status, while also being able to analyse and predict changes of the state of the Earth system by applying scientific methodologies. You are capable of objectively assessing

your own methods and results as well as communicating them factually and clearly to fellow experts or laymen.

Contents and structure of the study programme

During the course of the two-year study programme, modules in the amount of 120 credits, including the Master's thesis, have to be completed successfully. Six modules have to be completed in the first semester and four in the second and third semester, respectively. You complete your studies with the submission of your Master's thesis at the end of the fourth semester. The semi-elective modules allow for the pursuing of personal interests by freely choosing three modules in the second and third semester.

The first semester brings all students to the same advanced level of knowledge concerning mathematics, physics, chemistry, biology and economics. This ensures that all students are able to successfully complete the courses of the following semesters. The module "Lecture Series Earth System Science" provides an overview of current topics and introduces students to scientific staff members and their research projects at the University of Hohenheim.

The key aspect of Earth System Science is to transcend common boundaries of scientific disciplines. For this reason, the components of the Earth system are not covered in individual modules. Instead, the second semester courses "Climate History and Evolution of the Earth System" and "Energy and Water Regime at the Land Surface" cover cross-cutting topics essential for understanding the Earth system. These courses further impart awareness for interdisciplinary contexts.

Another focus of the programme lies in measurements, their analysis and interpretation, as well as the application of computer models. Expertise in these areas is taught in the modules "Measurement, Modelling and Data Assimilation I", "Remote Sensing of the Earth System" and "Measurement, Modelling and Data Assimilation II" in the second and third semester, respectively. Measurements in the field will make up parts of these modules. The collected data will be processed and analysed. This will also serve, amongst other things, as an introduction to data assimilation. This method connects measurement data with physical process descriptions in order to create an as complete as possible impression of the

state of the Earth system at a given time. The results will be used to create models, which is the main topic of “Measurement, Modelling and Data Assimilation II”.

Socio-economic modelling of land use decisions is the focus of the module “Land Use Economics” in the third semester. The topic ecology is covered in the module “Environmental Economics 1”. With the “Debate Seminar”, the third semester contains a unique element that serves to foster social and communication skills while applying knowledge you have obtained in the course of this programme.

The competencies you acquire will be further enhanced while writing your Master’s thesis in the fourth semester. The thesis serves to document your ability to employ scientific methods and draw sound conclusions.

Course of studies table

	6 Credits		12 Credits		18 Credits	24 Credits	30 Credits	
1st Sem.	Lecture Series Earth System Science (1201-550)	Economics for Earth System Science (1201-510)	Applied Mathematics for the Life Sciences (1101-400)		Physics of the Earth System (1201-580)	Chemistry of the Earth System (1301-460)	Biology of the Earth System and Biodiversity (2101-500)	1st Sem.
2nd Sem.	Climate History and Evolution of the Earth System (1201-560)	Energy and Water Regime at the Land Surface (3103-500)	Measurement, Modeling and Data Assimilation I (1201-520)			Remote Sensing of the Earth System (1201-500)	Elective Module I	2nd Sem.
3rd Sem.	Land Use Economics (4904-430)		Environmental Economics 1 (5206-520)	Debate Seminar (1201-570)	Measurement, Modeling and Data Assimilation II (1201-530)	Elective Module II	Elective Module III	3rd Sem.
4th Sem.	Master's Thesis Earth System Science (1200-500)							4th Sem.

This table represents a recommendation for the ideal course of studies during the four-semester Master's programme. It shows which modules should be completed in which semester. Depending on the course offerings, deviations are partly possible, as long as they conform to the rules set forth in the study and examination regulations. They are, however, not recommended in order to ensure an ideal course of studies.

Detailed information on individual modules and their corresponding courses, as well as the current state of courses on offer can be obtained at **www.uni-hohenheim.de/module-catalogue/ess**

Elective modules

In addition to the compulsory modules included in the course of studies table, you have to complete elective modules in the amount of 18 credits. These modules can be integrated flexibly into the first three semesters, depending on the availability of modules.

You may choose elective modules of the Earth System Science programme, of other natural science Master's programmes of the University of Hohenheim or of other degree programmes offered at the University of Hohenheim or at other German or foreign universities, for which a successful petition with the board of examiners is required.

Detailed information on individual modules, their corresponding courses, the current state of courses on offer as well as on how to register for exams may be obtained at **www.uni-hohenheim.de/module-catalogue/ess**

For any changes please see the latest version of the curriculum at **www.uni-hohenheim.de/curricula**

Examinations

Each module of the Master's programme in Earth System Science is completed with an examination. Modules counting towards the final grade are graded according to the German grading system, while modules that do not count towards the final grade are graded either according to the German grading system or marked with either "passed" or "failed".

Types of examinations offered at the University of Hohenheim include written and oral examinations, protocols of practical courses, preparation and presentation of contributions to seminars, as well as colloquia.

Written and oral examinations have to be taken during the examination period. Other assignments, such as protocols, reports, presentations, etc. are to be handed in during the lecture period.

Two examination periods are assigned to every module. The first examination period commences right after the end of the lecture period, while the second takes place at the end of the lecture-free period. You have to register for every exam. Please check the online module catalogue for information on how to register for the respective exam. The dates for

module examinations are set by the party responsible for the respective module.

Examination periods:

semester	Examination period (EP)
winter 2013/14 (1st EP)	03.02.2014 – 22.02.2014
winter 2013/14 (2nd EP)	24.03.2014 – 05.04.2014
summer 2014 (1st EP)	21.07.2014 – 09.08.2014
summer 2014 (2nd EP)	22.09.2014 – 11.10.2014
winter 2014/15 (1st EP)	09.02.2015 – 28.02.2015
winter 2014/15 (2nd EP)	30.03.2015 – 10.04.2015

Detailed information regarding requirements, type and duration of the examination, as well as the employed grading system may be found in the examination regulations of the Master's programmes of the Faculty of Natural Sciences.

Information on the respective valid examination regulations, deadlines, examination dates, etc. may be obtained at the examinations office or online at **www.uni-hohenheim.de/exams**

Grading system

Grades		
	German	English
1,0 1,3	*sehr gut*	very good
1,7 2,0 2,3	*gut*	good
2,7 3,0 3,3	*befriedigend*	satisfactory
3,7 4,0	*ausreichend*	sufficient
> 4,0	*nicht ausreichend*	fail

Extending the period of study

Whilst the standard period of study is four semesters, the programme does not require you to complete your studies within that time. There are ways and reasons to naturally extend the period of study. However, please note that the maximum period of study is 6 semesters.

Before modules are completed

If you have yet to complete your regular modules, excluding the Master's thesis, it is possible to take an *Urlaubssemester* (semester on leave). During this time you are free to spend a semester abroad, take courses and examinations at a host university. Completed modules can be accredited by the University of Hohenheim and thus contribute towards your degree. It is also possible to complete a prolonged internship, which may also be an extension of an internship done as part of an elective module; however, no extra credit is awarded.

A semester on leave provides you with the necessary flexibility to plan your studies on an individual basis. This need not necessarily extend the period of study. For further information on when a semester on leave can be granted please visit **www.uni-hohenheim.de/academicleaveofabsence**

After modules are completed

Once you have successfully completed your last module, with only the Master's thesis left, you have six months before you are required to begin working on your thesis. However, the maximum period of study is 6 semesters, which cannot be extended. You may, of course, opt to start writing your thesis right away. However, these six months provide you with the opportunity to do an internship or spend a semester abroad outside the constraints of the study programme. Please note that neither of these activities can be accredited, since all credits necessary have already been accumulated.

For further information on exchange semesters please visit the website of the Office of International Affairs at **exchange.uni-hohenheim.de**.

For Further information on internships please visit the website of the Internship Office at **uhoh.de/praktikum**.

Language courses – UNIcert III

UNIcert III – “English for Scientific Purposes” courses are available for all students of the Faculty of Natural Sciences. These courses are intended to aide students in improving their English skills and provide them with an internationally recognized language certificate. This UNIcert III programme is designed to meet the specific needs of our students and can easily be integrated into the course of studies as an elective module.

For further information please visit **www.natur.uni-hohenheim.de/languagecourse**.

German language courses are also available. For more information please visit **spraz.uni-hohenheim.de/deutsch**.

Career prospects

The obtained degree allows for further academic qualification at universities or research centers. Another focus lies in consultancy for public officials, private companies or individuals. Corresponding jobs are offered by state or federal government agencies and offices, insurance companies and private consulting firms. Further, employment at international, bilateral and non-governmental organisations involved in development cooperation as well as environmental and food security is possible. For graduates with a talent for communication, science journalism is another attractive career possibility.

You have successfully completed your studies and are wondering what to do next? If you want to enter the job market outside academia, you are advised to contact the CareerCenter for guidance. The CareerCenter Hohenheim is a service center and the first contact point for students and graduates for guidance when creating your own profile, as well as assistance with your career entry and career planning.

www.uni-hohenheim.de/careerentry

Do you still have questions?

For further questions regarding your course of studies, modules and other questions about the study programme please send an email to our academic counsellors at **counselling-ess@uni-hohenheim.de**.

Semester dates

Semester dates 2013 - 2015

Semester	Start of lectures	End of lectures	Holidays
Winter 2013/14	14 Oct. 2013	1 Feb. 2014	23/12/2013 – 6/1/2014
Summer 2014	7 April 2014	19 July 2014	10/6/2014 – 14/6/2014
Winter 2014/15	13 Oct. 2014	7 Feb. 2015	22/12/2014 – 6/1/2015
Summer 2015	13 April 2015	25 July 2015	26/5/2015 – 30/5/2015