



Landscape Ecology  
Master of Science

Curriculum



March 2014

## Preamble

This curriculum provides applicants and students as well as teaching and administrative staff with comprehensive information about the M.Sc. programme „Landscape Ecology“. It contains information about the course structure and summarises the most important exam regulations.

The information presented reflects the current situation. Titles and contents of compulsory and optional modules are sometimes subject to change. Due to administrative reasons such changes can only be considered in printed materials with delay. For this reason all information is supplied without liability.

If in doubt, please refer to the coordinator of the programme ([karin.amler@uni-hohenheim.de](mailto:karin.amler@uni-hohenheim.de)) to obtain up-to-date information. For up-to-date module descriptions please refer to the web-pages at [www.uni-hohenheim.de/modulkatalog](http://www.uni-hohenheim.de/modulkatalog). Time schedules and lecture halls of all courses are displayed in the Course Catalogue of the University of Hohenheim, available at the beginning of each semester online on the university's homepage: [www.uni-hohenheim.de](http://www.uni-hohenheim.de).

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## The Master Programme *Landscape Ecology*

### **Programme Objectives**

Climate, soils, human land use and other aspects of the environment vary in space and time. Landscape ecology studies how organisms respond to such environmental variation, how their interactions in variable environments determine community dynamics, and how these dynamics affect ecosystem processes. These fundamental topics of ecology and biodiversity research are also crucial for answering pressing questions posed by global environmental change:

- How can we conserve biodiversity under global change?
- How can we maintain ecosystem services important for society?
- How can natural resources be used sustainably in a changing environment?

In this programme, students acquire the ecological understanding, the quantitative skills, and the practical experience necessary to study ecological dynamics in changing environments. This enables them to assess environmental change effects on biodiversity and ecosystems, and to develop concepts for the sustainable use of natural resources.

### **Programme Design**

The two-year M.Sc. programme “Landscape Ecology” comprises four semesters of full time study with a total workload of approximately 3200 hours (including presence hours in lectures, seminars and exercises and the preparation time at home). Within the two years several thematic modules and the Master Thesis have to be completed. The programme can be started in October (winter semester) each year and the language of instruction is English.

The programme follows a modular course structure. In the first two semesters, students complete five compulsory and three semi-elective modules. In the third semester they choose five elective modules from a broad list of subjects and in the fourth semester they work on their thesis. This programme structure ensures a solid landscape ecology education but also allows students to get trained according to their own career aspirations.

	1. Semester	2. Semester		3. Semester	4. Semester
7,5 Credits	<b>3201-560</b> (Schurr) Landscape Ecology	Semi-elective module	6 Credits	Elective module	<b>Master Thesis</b> (30 credits)
7,5 Credit	<b>3201-570</b> (Schurr) Community and Evolutionary Ecology	Semi-elective module	6 Credits	Elective module	
7,5 Credit	<b>3201-580</b> (Schurr) Conservation Biology	Semi-elective module	6 Credits	Elective module	
7,5 Credit	<b>3202-440</b> (Fangmeier) Plant Ecology	<b>3201-600</b> (Schurr) Intensive Course Landscape Ecology	6 Credits	Elective module	
			6 Credits	Elective module	

## Modules

The modules of the first year are offered as blocked courses, each including three weeks of instruction, one week of individual preparation, and an exam at the end of week four. The modules of the third semester last the full length of the semester with an exam at the end of the semester.

The **compulsory modules** (together 37,5 credits) are:

Sem	Code	Name of Module	Duration	Credit-s	Professor
1	3201-560	Landscape Ecology	Block 1, WS	7,5	Schurr
1	3201-570	Community & Evolutionary Ecology	Block 2, WS	7,5	Schurr
1	3201-580	Conservation Biology	Block 3, WS	7,5	Schurr
1	3202-440	Plant Ecology	Block 4, WS	7,5	Fangmeier
2	3201-600	Intensive Course Landscape Ecology	Block 4, SS	7,5	Schurr

Of the following list of **semi-elective modules**, three modules (together 22,5 credits) have to be chosen:

Sem	Code	Name of Module	Duration	Credit-s	Professor
2	3201-620	Vegetation and Soils of Central Europe (= <i>Vegetation und Böden Mitteleuropas</i> )	Block 1, SS	7,5	Schmieder
2	3103-440	Spatial Data Analysis with GIS	Block 1, SS	7,5	Streck
2	3201-590	Combining Ecological Models and Data	Block 2, SS	7,5	Schurr
2	3101-560	Soils of the World	Block 2, SS	7,5	Rennert
2	3802-420	Biodiversity, Plant and Animal Genetic Resources	Block 2, SS	7,5	Sauerborn
2	3101-570	Field Course Soils and Vegetation (= <i>Boden- und vegetationskundliche Geländeübungen</i> )	Block 3, SS	7,5	Herrmann
2	3803-450	Crop Production Affecting the Hydrological Cycle	Block 3, SS	7,5	Asch

(WS) = Offered in each winter semester

(SS) = Offered in each summer semester

Furthermore at least 30 credits in **elective modules** have to be chosen. The modules can be chosen from the complete catalogue of the University's agricultural master modules (see: [www.uni-hohenheim.de/modulkatalog](http://www.uni-hohenheim.de/modulkatalog)). Up to 30 credits can also be chosen from courses offered by other study programmes at the University of Hohenheim, by another German university or by a foreign university, insofar as these are approved by the examination board. With compulsory, semi-elective and elective modules a sum of at least 90 credits has to be reached.

Suggestions for elective modules:

Sem	Code	Name of Module	Duration	Credit-s	Professor
3	3004-410	Inland Water Ecosystems*	1 Semester	6	Tremp
3	3103-510	Environmental Modelling	1 Semester	6	Streck

Sem	Code	Name of Module	Duration	Credit-s	Professor
3	3201-610	Project in Landscape Ecology	1 Semester	6	Schurr
3	3201-630	GIS and Remote Sensing in Landscape Ecology	1 Semester	6	Schmieder
3	3201-640	Limnology	1 Semester	6	Schmieder
3	3202-420	Global Change Issues	1 Semester	6	Fangmeier
3	3202-430	Air Pollution and Air Pollution Control	1 Semester	6	Fangmeier
3	3502-450	Population and Quantitative Genetics	1 Semester	6	Schmid
3	3603-480	Entomology	1 Semester	6	Zebitz
3	3403-420	Nachhaltigkeit und Bewertung von rohstoffliefernden Pflanzen – Life Cycle Assessment	1 Semester	6	Lewandowski
3	3403-430	Graslandwissenschaften	1 Semester	6	Elsässer
3	3801-410	Weltwirtschaftspflanzen und Weidewirtschaft in den Tropen und Subtropen	1 Semester	6	Cadisch
3	3802-410	Ecology and Agroecosystems	1 Semester	6	Sauerborn
3	4602-460	Environmental Microbiology, Parasitology and Microbial Ecology	1 Semester	6	Hölzle

\* Please register for participation per ILIAS

Each module of 6 credits corresponds to a workload of 4 SWS (weekly contact hours per semester), which is 56 contact hours per module. Each module of 7,5 credits corresponds to a workload of 5 SWS (weekly contact hours per semester), which is 70 contact hours per module. In addition time for preparation at home is needed, summing up to a total workload of about 160 hours for one module of 6 credits and 200 hours for one module of 7.5 credits. Each module may consist of different forms of teaching (e.g. seminar, lecture, practical, excursions).

**Module Descriptions** For the contents of all modules see: [www.uni-hohenheim.de/modulkatalog](http://www.uni-hohenheim.de/modulkatalog)

**Individual Timetable** The Course Catalogue of the University of Hohenheim contains information on times, lecturers and lecture rooms of all courses and is available at the beginning of each semester online at the university's homepage: [www.uni-hohenheim.de](http://www.uni-hohenheim.de). It is linked to the Module Descriptions. A tool to compose an individual timetable is available on the Intranet. Mind: especially non-blocked modules often consist of more than one course.

**Credit Point System  
Marks and Grades** With each completed module the students earn credits for the workload associated with each module. The M.Sc. programme has a requirement of 120 credits in total. The credit point system used in the M.Sc. programme is fully compatible with the European Credit Transfer System, ECTS.

The examination result is expressed in grades and marks. The highest score is 1.0 [grade A]. A score of 4.0 [grade D] is required for passing. The end score is calculated as a weighted average score according to the credits achieved in all modules and the Thesis.

	marks and grades		
	grades	mark	
<i>excellent performance</i>	<i>very good</i>	A	1.0
		A-	1.3
<i>performance considerably exceeding the above average standard</i>	<i>good</i>	B+	1.7
		B	2.0
		B-	2.3
<i>performance meeting the average standard</i>	<i>medium</i>	C+	2.7
		C	3.0
		C-	3.3
<i>performance meeting minimum criteria</i>	<i>pass</i>	D+	3.7
		D	4.0
<i>performance not meeting minimum criteria</i>	<i>fail</i>	F	5.0

### **Study and Examination Plan**

Students have to seek advice of one of the mentors of the programme on which elective modules are suitable for their individual profile. During the first month of study the candidate must have the study plan approved in which all chosen modules are mentioned. A counseling confirmation has to be signed by a co-ordinator or mentor and handed in to the examination office, before registration for module examination is possible. After registration for examination a module cannot be dropped any more.

### **Examinations**

Performance is examined through continuous assessment. Each module is examined upon completion. The examinations of the blocked modules are held at the end of the respective block period, those for the unblocked modules are held in the two examination periods that follow the lectures. Students have to register for the examinations of each semester at the examination office during the time period announced at the examination office (within this time period: blocked modules one week before exam at the latest!). Withdrawal on the first trial of each module's examination is possible up to 7 days before the examination date. The examination will be postponed to the next possible examination period.

The claim for examination expires if:

- a minimum of six examinations has not been passed by the end of the second semester at the latest
- an examination of one of the modules has not been passed by the end of the sixth semester at the latest
- in one of the modules an exam has to be repeated more than two times

The claim for examinations does not expire if the candidate cannot be held responsible for the failure to comply with the deadline. The students themselves are responsible for complying with these examination deadlines as well as all other regulations given in the examination regulations. The examination regulations and a leaflet on registration (see: <https://pruefungsamt.uni-hohenheim.de>) are distributed by the examination office.

Please mind that plagiarism, that means the take-over of text or phrases in a written examination (even within a partial performance) without quoting them accordingly, will be marked as attempt of deception and the respective examination performance is to be graded "fail" (F; mark 4.0). A decla-

ration (<https://agrar.uni-hohenheim.de/plagiate.html?&L=1>) has to be attached to homeworks, presentations, and to the thesis and the final digital text document has to be transferred to the mentoring supervisor.

### ***Exam Repetition***

In case of failure the examination office will inform the student via mail. Normally, the letter includes the repetition date. In some cases the date for repetition has not been pointed out at the time of informing the students. Students are responsible themselves to check with the responsible professor or the examination office about dates for repeater exams. Usually repeater exams for blocked modules will be scheduled by the responsible professor within the same semester. Repeater exams in lectures will usually automatically be scheduled for the next examination period.

### ***Master Thesis***

The master thesis shall show that the candidate is able to work independently on a problem in the field of "Landscape Ecology" within a fixed period of time by applying scientific methods. The exam consists of a written (thesis) and an oral (defense) part. The candidate has to defend the essential arguments, results and methods of the thesis in a colloquium of 30-45 minutes. The written part of the master thesis has to be completed within a period of six months. It is usually written during the fourth semester. Depending on the chosen theme there might be cases where the third semester is more appropriate. Thesis work includes a literature review, new and original data derived from field work, a period of writing-up and, finally, a presentation. This work can be carried out either at Hohenheim University or at one of the various partner universities.

### ***Quality Assurance***

The quality of courses and modules is evaluated in a two year rotation by the students of all study programmes. The evaluation sheets are distributed and evaluated by the Faculty of Agricultural Sciences and the results are sent back to the lecturers in an **anonymous** format. The lecturers are asked to discuss the results with the students at the end of their courses.

### ***Academic calendar***

In the winter semester (WS) courses usually begin in week 42 and end in week 6 or 7 of the new year. In the summer semester (SS) courses usually begin the first Monday in April and end in week 30, 31, or 32. In each semester for unblocked modules the lecture period is followed by an examination period of three weeks. The last block period of each semester has an overlapping with this examination period of the unblocked modules.

### ***Teaching Staff & Mentoring***

The professors of the University of Hohenheim, have broad experience in international research. Students also benefit from Hohenheim's active links with academic partners worldwide. Guest speakers from partner universities as well as research, development and policy institutions cover additional topics, and thus enrich the curriculum with special fields of expertise. A personal mentor from the teaching staff is assigned to advise on appropriate profiles and support smooth and goal-oriented progress. The study and examination plan has to be approved by a mentor. Which elective modules are suitable for the individual profile, can also be discussed with the coordinator for the programme. Mentors are:

- Prof. Dr. Frank Schurr, Institute of Landscape and Plant Ecology, [Landscape Ecology and Vegetation Science \(320a\)](#)
- Prof. Dr. Klaus Schmieder, Institute of Landscape and Plant Ecology, [Landscape Ecology and Vegetation Science \(320a\)](#)

### ***Study Abroad***

Students are encouraged to spend one semester in the second year at a partner university abroad, to gain additional experience and further strengthen their individual profile. Our credit point system is intended to facilitate the mutual acceptance of courses attended at different universities. Assessment is based on the European Credit Transfer System (ECTS), which facilitates such kind of international mobility. German students are



strongly advised to spend a semester abroad. Particularly, the third semester is suitable for integrated study abroad. Students will preferably spend this time at one of the partner universities of the Euro League for Life Sciences: Universität für Bodenkultur Wien (BOKU), Austria; Royal Veterinary and Agricultural University (KVL), Denmark; Swedish University of Agricultural Sciences (SLU), Sweden; Wageningen University, Netherlands; Czech University of Agriculture (CUA), Czech Republic, Warsaw Agricultural University (SGGW), Poland. On the basis of an agreement on quality standards the members of the Euro League for Life Sciences have agreed to mutually recognize study achievements. Quantitative parity of study achievements is based on the European Credit Transfer System (ECTS). Students may also request to spend the semester at universities other than mentioned above.

**Degree**

After successful completion of all modules as well as the thesis, the student is awarded the degree "Master of Science" (M.Sc.). This degree entitles the student to continuing with a Ph.D./doctoral programme if the total grade is above average.

**Responsible Scientist**

Prof. Dr. Frank Schurr  
[Landscape Ecology and Vegetation Science \(320a\)](#)

**Professors in Charge of Compulsory Modules**

Prof. Dr. Frank Schurr  
[Landscape Ecology and Vegetation Science \(320a\)](#)  
  
Prof. Dr. Andreas Fangmeier  
[Plant Ecology and Ecotoxicology \(320b\)](#)

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# Blocked Modules and Periods 2014/2015

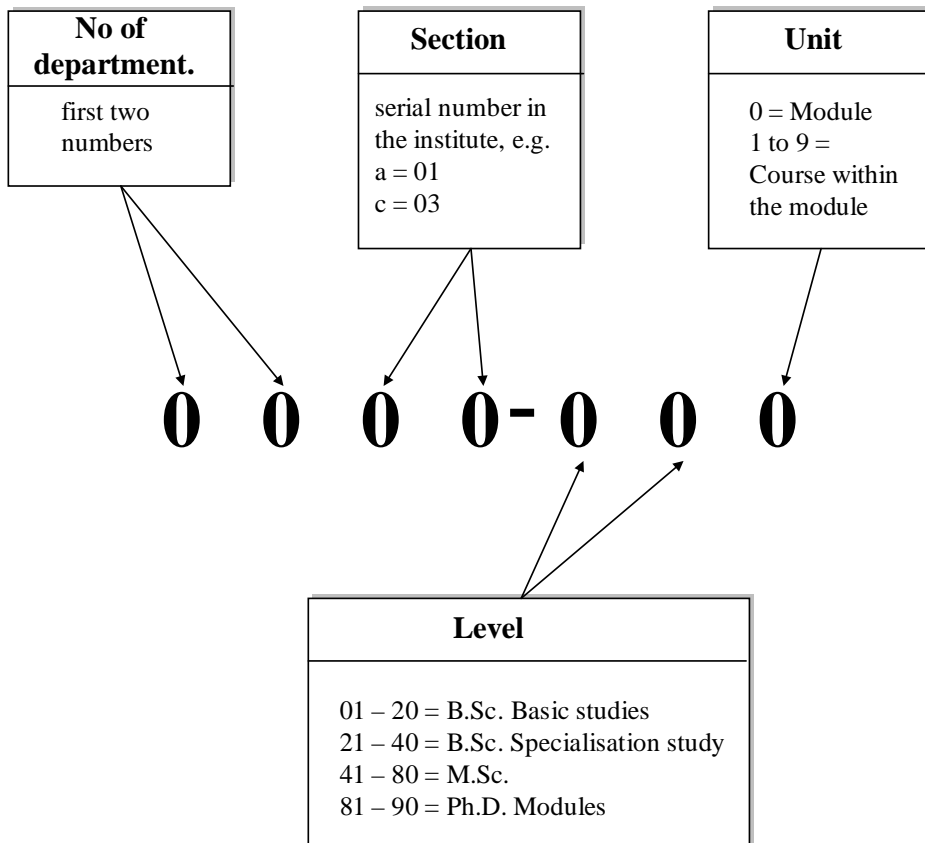
From WS 14/15 on all blocked modules offered by the Faculties of Natural Sciences and Agricultural Sciences will have a duration of 4 weeks, an estimated workload of around 200 hours, and will result in 7,5 ECTS credits.

## Blocked Modules of the Faculty of Agriculture

<b>Winter Semester 2014/15</b>					
(1. examination period of unblocked modules: 09.02.-27.02.15)					
	<b>Block 1</b> (13.10.-7.11.)	<b>Block 2</b> (10.11.-5.12.)	<b>Block 3</b> (8.12.-16.1.)	<b>Block 4</b> (19.1.-13.2.)	<b>Holiday block</b> (March)
Ecol	● <b>3201-560</b> (Schurr) Landscape Ecology	● <b>3201-570</b> (Schurr) Community and Evolutionary Ecology	● <b>3201-800</b> (Schurr) Conservation Biology	● <b>3202-440</b> (Fangmeier) Plant Ecology	● <b>3003-410</b> (Schöne) Food Safety and Quality Chains
Econ.	○ <b>4904-460</b> (Berger) Farm System Modelling	○ <b>4901-420</b> (Zeller) Poverty and Development Strategies	○ <b>4901-470</b> (Zeller) Quant. Meth. i. Econom.	Prüfung	
	○ <b>4904-430</b> (Berger) Land Use Economics			Prüfung	
Animal Sc.					○ <b>4602-500</b> (Beyer) Biologische Sicherheit und Gentechnikrecht ● <b>4502-410</b> (Mosenthin) Futterwertbeurteilung, FM-mikrobiologie und ..
<b>Summer Semester 2015</b>					
(1. examination period of unblocked modules: 27.07.-14.08.15)					
	<b>Block 1</b> (13.4.-8.5.)	<b>Block 2</b> (11.5.-12.6.)	<b>Block 3</b> (15.6.-10.7.)	<b>Block 4</b> (13.07.-7.8.)	<b>by arrangement</b>
Crop S	● <b>3803-470</b> (Asch) Interdisciplinary Practical Science Training ( <b>AgriTropics only!</b> )	○ <b>3801-430</b> (Cadisch) Integrated Agricultural Production Systems	○ <b>3803-450</b> (Asch) Crop Production Affecting the Hydrological Cycle	○ <b>3803-430</b> (Asch) Ecophysiology of Crops in the T+S	○ <b>3603-500</b> (Zebitz) Exercises in Biological Pest Control
Engin.		○ <b>4403-580</b> (Müller, J.) Water and Soil Management in Agric. Production	○ <b>4403-470</b> (Müller, J.) Renewable Energy f. Rural Areas	○ <b>4403-550</b> (Müller, J.) Postharvest Technology of Food and Bio-Based Prod.	
Animal T + S		○ <b>4801-430</b> (Valle Zárate) Livestock Breeding Programmes ...	○ <b>4802-450</b> (Dickhöfer) Quant. Meth. in Anim. Nutrition +Veget. Scienc.	○ <b>4801-420</b> (Valle Zárate) Promotion of Livestock in Trop. Environm.	
Soc.			○ <b>4602-450</b> (Hölzle) Food Safety a. Drinking Water Quality related to Zoonoses in the T+S	○ <b>4303-480</b> (Lemke) Global Nutrition	
Ecology		● <b>3802-420</b> (Sauerborn) Biodiversity, Plant and Animal Gen. Resources			
	● <b>3201-620</b> (Schmiedler) Vegetation and Soils of Central Europe	● <b>3201-590</b> (Schurr) Combining Ecological Modells and Data	● <b>3101-570</b> (Hermann) Field Course Soils and Vegetation	● <b>3201-600</b> (Schurr) Intensive Course Landscape Ecology	
Soil Sc.nces	● <b>3103-450</b> (Streck) Spatial Data Analysis with GIS	● <b>3102-440</b> (Kandeler) Environmental Pollution and Soil Organisms	● <b>3101-580</b> (Rennert) Bodenschutz, Bodenbewertung, -sanierung	● <b>3103-460</b> (Streck) Environmental Science Project	● <b>3102-420</b> (Kandeler) Bodenwissenschaftliches Experiment
	● <b>3102-450</b> (Kandeler) Molecular Soil Ecology	● <b>3101-560</b> (Rennert) Soils of the World		● <b>3101-430</b> (Rennert) Interdiscipl. Adv. Soil Sc. Project (Engl.+ Ger.)	
Animal Sciences	● <b>4701-490</b> (Stefanski) Verhaltensbiologie	● <b>4702-510</b> (Bennewitz) Zuchtplanung und Zuchtpraxis i. d. ...	● <b>4701-480</b> (Stefanski) Verhaltensphysiologie und Immunobiologie	● <b>4501-450</b> (Rodehuts.) Sp. Ernähr. Wiederkäuer	
	● <b>4502-430</b> (Mosenthin) Methoden zur Analytik u. Qualitätsbeurt. von Futtermitteln	● <b>7301-410</b> (Rosenkranz) Bienen ● <b>4601-410</b> (Amselgru.) Angew. Anatomie und klinische U.-methoden		● <b>4602-490</b> (Hölzle) Spezielle Tierhygiene	

Please check the module descriptions for how to register for participation in these modules!

# Explanation of Module Code



# Lecture Periods

<b>WS 14/15</b>	<b>First day of <u>un</u>-blocked modules:</b>	(42. KW) Monday, 13.10.2014
	<b>First day of blocked modules:</b>	(42. KW) Monday, 13.10.2014
	<b>Last day of <u>un</u>-blocked modules:</b>	(6. KW) Saturday, 07.02.2015
	<b>Last day of blocked modules:</b>	(7. KW) Friday, 13.02.2015
<b>SS 15</b>	<b>First day of blocked modules:</b>	(16. KW) Monday, 13.04.2015
	<b>First day of <u>un</u>-blocked modules:</b>	(16. KW) Monday, 13.04.2015
	<b>Last day of <u>un</u>-blocked modules:</b>	(30. KW) Saturday, 25.07.2015
	<b>Last day of blocked modules:</b>	(32. KW) Friday, 07.08.2015

**Free of lectures:** Christmas holidays: Mo 22.12.2014 – Tu 06.01.2015, Easter holidays: Fr 03.04. – Mo 06.04.2015, Labour Day: Fr 01.05.2015, Ascension Day: Tu 14.05.2015, Pentecost holidays: Tu 25.05.2015 – Sa 30.05.2015 (excursions might take place), Feast of Corpus Christi: Th 04.06.2015. The “Dies Academicus” (probably 03.07.2015) will be free of lectures too.

## Examination periods in winter semester 2014/15

**B.Sc. and M.Sc. period 1:** calendar week 7 to 9  
**B.Sc. and M.Sc.: period 2:** calendar week 13 to 14  
**Deadline for the registration for exams:** is fixed by the examination office

## Examination periods in summer semester 2015

**B.Sc. and M.Sc. period 1:** calendar week 31 to 33  
**B.Sc. and M.Sc.: period 2:** calendar week 39 to 41  
**Deadline for the registration for exams:** is fixed by the examination office

Questions concerning the examination regulations, the study and examination plan, withdrawal or transcripts of records are answered at the examination office and the exact dates of the module examinations are posted at the online notice-board of the examination office at: (<https://www.uni-hohenheim.de/pruefung.html?&L=1>).