UNIVERSITÄT HOHENHEIM

FAKULTÄT AGRARWISSENSCHAFTEN

Crop Sciences

Master of Science

Curriculum

March 2014

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Preamble

This curriculum provides applicants and students as well as teaching and administrative staff with information about the M.Sc. programme „Crop Sciences“. It contains information on the programme structure and summarizes the most important examination 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 provided without liability.

If in doubt, please refer to the co-ordinator of the programme (cropsciences@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. **Time schedules and lecture halls of all courses offered at the University of Hohenheim 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.**

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The Master's Programme „Crop Sciences"

Programme Objectives

The goal of crop sciences is to develop crops and cropping systems with highest possible efficiency in converting light and supplemental resource into food, feed, and fiber. Biological, physiological, molecular genetic and biometric principles are applied and graduates are prepared to develop cropping systems that are profitable and ecologically sustainable.

Programme Design for beginners until WS 13/14

The two-year M.Sc. programme "Crop Sciences" comprises four semesters, during which fifteen thematic modules, three compulsory modules, five semi-elective, seven elective modules, and the Master Thesis have to be completed. That is a total of 15 modules over three semesters. One semester remains for the thesis work.

One of the following majors has to be chosen and upon request the title of the chosen major can be reported in the transcript of records.

- „Crop Physiology and Nutrition"
- „Plant Breeding and Seed Science"
- „Crop Protection"

The full programme has an extent of 120 ECTS and is constructed by 4 semesters each with 30 ECTS-credits. The language of instruction is English.

Programme Design for beginners WS 14/15

The two-year M.Sc. programme "Crop Sciences" comprises four semesters, during which thematic modules and the Master Thesis have to be completed.

One of the following majors has to be chosen and the title of the chosen major will be reported in the transcript of records.

- „Plant Breeding and Seed Science"
- „Plant Nutrition and Protection "

The full programme has an extent of 120 ECTS credits and is constructed by 4 semesters each with 30 ECTS-credits. The language of instruction is English and the programme can be started in October (winter semester) each year.

Modules

Most modules last the full length of the semester. Until summer 2014 some modules are offered as blocked courses lasting three and a half weeks (B1 to B5 = winter semester, B6 – B10 = summer). From 2014/15 on some elective modules 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.

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**.

Individual Timetable

The Course Catalogue of 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. 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.

Programme Design for those who begun the programme until WS 13/14:

Stucture of major „Crop Physiology and Nutrition“

	1. Semester	2. Semester	3. Semester	4. Semester
6 Credits	3401-470 **Crop Physiology**	3402-450 **Advanced Statistical Methods for Metric and Categorical Data**	Elective module	**Master Thesis** (30 credits)
6 Credits	3502-440 **Methods of Scientific Working** (for Crop Sciences)	3703-430 **Crop – Environment Interactions**	Elective module	
6 Credits	3302-460 **Plant Quality**	3302-490 **Rhizosphere Processes**	Elective module	
6 Credits	3302-450 **Plant Symbioses for Nutrient Acquisition**	Elective module	Elective module	
6 Credits	3301-460 **Exercises in Plant Nutrition**	Elective module	Elective module	

Stucture of major „Plant Breeding and Seed Science”

	1. Semester	2. Semester	3. Semester	4. Semester
6 Credits	3401-470 **Crop Physiology**	3402-450 **Advanced Statistical Methods for Metric and Categorical Data**	3501-460 **Planning of Breeding Programmes**	**Master Thesis** (30 credits)
6 Credits	3502-440 **Methods of Scientific Working** (for Crop Sciences)	3501-450 **Breeding Methodology**	3501-470 **Selection Theory**	
6 Credits	3502-450 **Population and Quantitative Genetics**	Elective Module	3504-430 **Seed Research**	
6 Credits	Elective Module	Elective module	Elective module	
6 Credits	Elective Module	Elective module	Elective module	

Stucture of major „Crop Protection”

	1. Semester	2. Semester	3. Semester	4. Semester
6 Credits	3401-470 **Crop Physiology**	3402-450 **Advanced Statistical Methods for Metric and Categorical Data**	3603-470 **Ecology of Insects**	**Master Thesis** (30 credits)
6 Credits	3502-440 **Methods of Scientific Working** (for Crop Sciences)	3602-460 **Information Technologies and Expert Systems in Plant Protection**	3601-460 **Molecular Phytopathology**	
6 Credits	3603-480 **Entomology**	Elective module	Elective module	
6 Credits	3602-450 **Molecular Aspects of Plant Protection**	Elective module	Elective module	
6 Credits	Elective module	Elective module	Elective module	

Programme Design for those who begin the programme in WS 14/15 or later:

Stucture of major „Plant Breeding and Seed Science"

	1. Semester	2. Semester	3. Semester	4. Semester
6 Credits	3502-440 **Methods of Scientific Working** (for Crop Sciences)	3402-450 **Advanced Statistical Methods for Metric and Categorical Data**	3501-460 **Planning of Breeding Programmes**	**Master Thesis** (30 credits)
6 Credits	3502-450 **Population and Quantitative Genetics**	3501-450 **Breeding Methodology**	3501-470 **Selection Theory**	
6 Credits	Elective Module	3504-430 **Seed Research**	Elective module	
6 Credits	Elective Module	Elective module	Elective module	
6 Credits	Elective Module	Elective module	Elective module	

Stucture of major „Plant Nutrition and Protection"

	1. Semester	2. Semester	3. Semester	4. Semester
6 Credits	3502-440 **Methods of Scientific Working** (for Crop Sciences)	Elective module	Elective module	**Master Thesis** (30 credits)
6 Credits	3302-500 **Methods in Molecular Biology and Biotechnology**	Elective module	Elective module	
6 Credits		Elective module	Elective module	
6 Credits	3302-440 **Physiology and Biochemistry of Crops**	Elective module	Elective module	
6 Credits	3503-450 **From Genes to Transgenic Plants**	Elective module	Elective module	

Instead of choosing fife elective modules (each 6 credits) the major "Plant Nutrition and Protection" offers the possibility to choose four blocked modules (each 7.5 credits) offered by the Faculties of Agricultural Sciences and/or Natural Sciences during the second and/or the third semester. Choosing modules of the Faculty of Natural Sciences requires the approval of a mentor and a request to the examination board.

For those who begun the programme until WS 13/14 the modules are listed below. For details about contents, lecturers and methods of instruction refer to the module description site (www.uni-hohenheim.de/modulkatalog).

The **compulsory modules** are:

Sem	Modules		Block	Exam	Professor
1	3401-470	Crop Physiology (*WS 13/14*	unblocked	oral	Claupein
1	3502-440	Methods of Scientific Working for Crop Sciences	unblocked	written	Schmid
2	3402-450	Advanced Statistical Methods for Metric and Categorical Data*	unblocked	written	Piepho

* Contents of 3402-430 "Quantitative Methods in Biosciences" are required.

One of the following three majors (including all listed modules) has to be chosen:
Major: Crop Physiology and Nutrition (responsible scientist: LUDEWIG)

Sem	Modules		Block	Exam	Professor
1	3302-460	Plant Quality	unblocked	wr.+ICA	Ludewig
1	3302-450	Plant Symbioses for Nutrient Acquisition	unblocked	oral	Neumann
1/3	3301-460	Exercises in Plant Nutrition *(until WS 13/14)*	after block 5	written	Müller, T.
2	3703-430	Crop – Environment Interactions *(until WS 13/14)*	unblocked	oral	Wünsche
2	3302-490	Rhizosphere Processes - Nutrient Acquisition and Stress Adaptations of Higher Plants	unblocked	oral	Neumann

ICA = in-course assessment

Major: Plant Breeding and Seed Science (responsible scientist: SCHMID)

Sem	Modules		Block	Exam	Professor
1	3502-450	Population and Quantitative Genetics	unblocked	written	Schmid
2	3501-450	Breeding Methodology	unblocked	written	Melchinger
3	3501-460	Planning of Breeding Programmes	block 3	written with ICA	Melchinger
3	3501-470	Selection Theory	unblocked	written	Melchinger
3	3504-430	Seed Research	unblocked	oral	Kruse

Major: Crop Protection (responsible scientist: VÖGELE)

Sem	Modules		Block	Exam	Professor
1	3603-490	Biological Pest Control	unblocked	written	Zebitz
1	3603-480	Entomology	unblocked	written	Zebitz
1	3602-450	Molecular Aspects of Plant Protection	unblocked	written	Gerhards
3	3601-460	Molecular Phytopathology	Partly blocked in B5	written	Vögele
2	3602-460	Information Technologies and Expert Systems in Plant Protection**	block 8	written	Gerhards

** early registration for participation, as described in the module catalogue!

The seven **elective modules** can be chosen from the other majors, from the listing below or from the modules of other Master programmes of the faculty of Agricultural Sciences of the University of Hohenheim.

Suggestions for Elective Modules *(as offered until SS 2014)*

Sem	Modules		Block	Exam	Professor
1/3 or 2/4	3301-470	Fertilisation and Applied Soil Chemistry in the Tropics and Subtropics	e-learning	oral	Müller, T.
1/3	3301-440	Soil Fertility and Fertilisation in Organic Farming	unblocked	oral	Müller, T.
1/3	3302-450	Plant Symbioses for Nutrient Acquisition	unblocked	oral	Neumann
1/3	3801-420	Crop Production Systems	block 4	written	Cadisch
1/3	3803-450	Crop Production Affecting the Hydrological Cycle	block 4	oral	Asch
1/3	3405-410	Organic Farming in the Tropics and Subtropics	block 5	written	Zikeli
1/3	3301-460	Exercises in Plant Nutrition *(until WS 13/14)*	after block 5	written	Müller, T.
2	3401-450	Conservation Agriculture	unblocked	oral with ICA	Claupein
2	3502-470	Plant Genetic Resources	unblocked	written	Schmid
2	3504-440	Seed Technology	unblocked	oral+ICA	Kruse
2	3503-450	From Genes to Transgenic Plants	unblocked	written	Weber
2	3802-420	Biodiversity, Plant and Animal Genetic Resources	block 8	written	Sauerborn
2	3803-430	Ecophysiology of Crops in the Tropics and Subtropics	block 10	oral	Asch
2	3603-500	Exercises in Biological Pest Control	block 10	written	Zebitz
2	3501-480	Breeding of Tropical, Ornamental, and Vegetable Plants	block 10	written +ICA	Melchinger
3	3503-460	Transgenic Organisms in Research and Agriculture	unblocked	written	Weber
3	3802-410*	Ecology and Agroecosystems	block 2	written	Sauerborn

ICA = In-course-assessment

* The number of places is limited. You are requested to register for participation via ILIAS. The registration frame will be open from Sept 10th to Oct 10th.

For the complete catalogue, refer to www.uni-hohenheim.de/modulkatalog.

With the approval of the examination board, study and examinations of up to fife of these elective modules/30 ECTS credits can be chosen from other programmes of the University of Hohenheim as well as from other German or foreign universities.

Modules for those who begin the programme in WS 14/15 or later:

Major: Plant Breeding and Seed Science

The **compulsory modules** (42 credits) are from winter semester 2014/15 on:

Sem	Code	Name of Module	Duration	Credits	Professor
1	3502-440	Methods of Scientific Working (for Crop Sciences)	1 Semester (in the morning)	6	Schmid
1	3502-450	Population and Quantitative Genetics	1 Semester	6	Schmid
2	3501-450	Breeding Methodology	1 Semester	6	Melchinger
2	3504-430	Seed Research	1 Semester	6	Kruse
2	3402-450	Advanced Statistical Methods for Metric and Categorical Data	1 Semester	6	Piepho
3	3501-470	Selection Theory	First half of Semester	6	Melchinger
3	3501-460	Planning of Breeding Programmes	Second half of semester	6	Melchinger

The **elective modules** can be chosen from the listing below or from the modules of other Master programmes of the faculty of Agricultural Sciences of the University of Hohenheim. On request to the examination board and with the approval of a mentor, modules can be chosen from other programmes of the University of Hohenheim.

Suggestions for **elective modules** (48 credits have to be chosen) for **Plant Breeding and Seed Science**:

Sem	Code	Name of Module	Duration	Credits	Professor
1-4	3000-410	Portfolio-Module (Master)	Not defined	1 - 7,5	Müller, T.
1	3302-440	Physiology and Biochemistry of Crops	1 Semester (in the morning)	6	Ludewig
1/3	3402-420	Quantitative Methods in Biosciences	1 Semester	6	Piepho
1	3504-440	Seed Technology	1 Semester	6	Kruse
1	4602-500	Biologische Sicherheit und Gentechnikrecht	In March	7,5	Beyer
2	3501-480	Breeding of Tropical, Ornamental, and Vegetable Plants	1 Semester	6	Melchinger
2	3502-470	Plant Genetic Resources	1 Semester	6	Schmid
3	3402-460	Advanced Statistical Methods for Metric and Categorical Data II	1 Semester	6	Piepho
3	3502-810	Quantitative Methods in Plant and Livestock Genomics	1 Semester	6	Schmid
3	3503-450	From Genes to Transgenic Plants	1 Semester (in the morning)	6	Scholten
2	3503-470	Basics of Bioinformatics	1 Semester	6	Scholten

Major: Plant Nutrition and Protection

The **compulsory modules** (30 credits) are from winter semester 2014/15 on:

Sem	Code	Name of Module	Duration	Credits	Professor
1	3502-440	Methods of Scientific Working (for Crop Sciences)	1 Semester (in the morning)	6	Schmid
1	3302-440	Physiology and Biochemistry of Crops	1 Semester (in the morning)	6	Ludewig
1	3503-450	From Genes to Transgenic Plants	1 Semester (in the morning)	6	Scholten
1	3302-500	Methods in Molecular Biology and Biotechnology	1 Semester (in the afternoon)	12	Ludewig

The **elective modules** can be chosen from the listing below or from the modules of other Master programmes of the faculty of Agricultural Sciences of the University of Hohenheim. On request to the examination board and with the approval of a mentor, modules can be chosen from other programmes of the University of Hohenheim.

Suggestions for **elective modules** (60 credits have to be chosen) ***for Plant Nutrition and Protection***:

Sem	Code	Name of Module	Duration	Credits	Professor
1-4	3000-410	Portfolio-Module (Master)	Not defined	1 - 7,5	Müller, T.
1	3402-420	Quantitative Methods in Biosciences	1 Semester	6	Piepho
1	4602-500	Biologische Sicherheit und Gentechnikrecht	In March	7,5	Beyer
2	3302-430	Molecular Plant Nutrition	1 Semester	6	Ludewig
2	3302-490	Rhizosphere Processes - Nutrient Acquisition and Stress Adaptations of Higher Plants	1 Semester	6	Neumann
2	3401-450	Conservation Agriculture	1 Semester	6	Claupein
2	3402-450	Advanced Statistical Methods for Metric and Categorical Data	1 Semester	6	Piepho
2	3502-470	Plant Genetic Resources	1 Semester	6	Schmid
2	3602-460	Information Technologies and Expert Systems in Plant Protection	1 Semester (partly blocked)	6	Gerhards
2	3603-420	Crop Protection in Organic Farming	1 Semester	6	Zebitz
2	3603-490	Biological Pest Control	1 Semester	6	Zebitz
2	3603-500	Exercises in Biological Pest Control	Summer school	7,5	Zebitz
2	3701-420	Qualitätsrelevante Inhaltsstoffe von Nutzpflanzen	1 Semester	6	Graeff-Hönninger
2	3701-450	Biotechnologische Methoden in der Landwirtschaft	1 Semester	6	Zörb
3	3302-450	Plant Symbioses for Nutrient Acquisition	1 Semester	6	Neumann
3	3302-460	Plant Quality	1 Semester	6	Ludewig

Sem	Code	Name of Module	Duration	Credits	Professor
3	3601-460	Molecular Phytopathology	1 Semester (partly blocked)	6	Vögele
3	3602-450	Molecular Aspects of Plant Protection	1 Semester	6	Gerhards
3	3603-480	Entomology	1 Semester	6	Zebitz
3	3701-440	Forschungsaspekte qualitätsrelevanter Inhaltsstoffe	1 Semester	6	Graeff-Hönninger
3	3801-420	Crop Production Systems	1 Semester	6	Cadisch
3	3102-410	Applied Microbiology	1 Semester	6	Kandeler
2/3	3301-480	Fertilisation and Soil Fertility management in the Tropics and Subtropics	e-learning	6	Müller, T.

Suggestions for **elective modules** offered by the **Faculty of Natural Sciences** *(Choosing modules of the Faculty of Natural Sciences requires the approval of a mentor and a request to the examination board):*

Sem	Code	Name of Module	Duration	Credits	Professor
2	1101-430	Modelling and Simulation of Biochemical Reaction Networks	Block ?, SS	7,5	Kügler
2	1302-430	Naturstoffanalyse	Block ?, SS	7,5	Beifuß
2	2102-420	Bioaktive Pflanzenstoffe	Block ?, SS	7,5	Spring
2	2402-410	Molekulare Virologie	Block ?, SS	7,5	Pfitzner
2	2402-420	Angewandte molekulare Virologie	Block ?, SS	7,5	Pfitzner
2	2601-430	Entwicklungsbiologie der Pflanzen*	Block ?, SS	7,5	Schaller
3	2103-420	Zellbiologie parasitischer und symbiontischer Interaktionen bei Pflanzen	Block ?, WS	7,5	Küppers
3	2601-410	Pflanze-Pathogen Interaktionen*	Block ?, WS	7,5	Schaller
3	2602-500	Regulatorische Prinzipien pflanzlicher Signaltransduktionswege	Block ?, WS	7,5	Schulze

** Limited number of participants!*

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 total requirement of 120 credits. 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 Master Thesis.

	marks and grades		
	grades		*mark*
excellent performance	*very good*	A	1.0
		A-	1.3
performance considerably exceeding the above average standard	*good*	B+	1.7
		B	2.0
		B-	2.3
performance meeting the average standard	*medium*	C+	2.7
		C	3.0
		C-	3.3
performance meeting minimum criteria	*pass*	D+	3.7
		D	4.0
performance not meeting minimum criteria	*fail*	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 each student's study and examination plan has to be approved by the coordianator or the respective personal mentor. In the study and examination plan all chosen modules have to be mentioned. Until SS 14 the study plan has to be signed by a co-ordinator or mentor before it is handed in to the examination office. Exchanges of modules need to be approved. From WS 14/15 on only a counselling 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

Each module is examined upon completion in an oral or a written exam. The examination may be divided in sections which can be weighted differently. The weighting of the partial performances (in-course assessments = ICA) is written down in the module descriptions. The examinations of the modules should be taken within the semester scheduled in this curriculum. 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 will be registered by signature automatically for the three compulsory modules offered in the first and second semester. The registration for the examination of the semi-elective and elective modules will take place by submitting the verified study and examination plan to the examination office. The study and examination plan has to be submitted one week before the first examination of a semi-elective or elective module at the latest. Withdrawal on the first trial of each module examination is possible up to 7 days before the examination date. The examination will be postponed to the next possible examination period.

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

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 15 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 (https://pruefungsamt.uni-hohenheim.de) are distributed by the examination office.

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 „Crop Sciences“, within a fixed period of time by applying scientific methods. The exam consists of a written part (thesis) and an oral presentation (defence). 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. There might be cases, depending on the chosen modules, for which the third semester is more appropriate. Thesis work can pursue empirical or theoretical questions related to ongoing research projects but students' own initiatives and ideas are certainly welcome. It includes a literature review as well as new and original data derived from field and or laboratory work. This work can be carried out either at University of Hohenheim or at one of the 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. For un-blocked modules the lecture period of each semester is followed by an ex-amination period of three weeks. The last block period of each semester has an overlapping with this examination period of the unblocked modules.

Mentoring

A personal mentor from the teaching staff is assigned to advice on appropriate profiles and support smooth and goal-oriented study progress. The study and examination plan has to be signed by a mentor before it is handed in to the examination office. The following scientists have been appointed as mentors:

Plant Breeding and Seed Science:

- Prof. Dr. Schmid (Crop Biodiversity and Breeding Informatics, 350)

Plant Nutrition and Protection:

- Prof. Dr. Ludewig (Nutritional Crop Physiology, 340)
- Prof. Dr. Neumann (Nutritional Crop Physiology, 340)
- Prof. Dr. Zebitz (Applied Entomology, 360)
- Prof. Dr. Voegele (Phytopathology, 360)

Academic advisor	providing specific information on the disciplines: • Dr. Tobias Schrag (tobias.schrag@uni-hohenheim.de, phone: 459-23483)
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 Euroleague 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.) in Crop Sciences. This degree entitles the student to continue with a Ph.D./doctoral programme if the total grade is above average.
Responsible Scientist	Prof. Dr. C. Zebitz Department of Applied Entomology
Professors in charge of the majors	Prof. Dr. U. Ludewig, Nutritional Crop Physiology Prof. Dr. K. Schmid, Crop Biodiversity and Breeding Informatics Prof. Dr. R. Voegele, Phytopathology
Contact	Programme Coordinator Crop Sciences Kerstin Hoffbauer University of Hohenheim (790) 70593 Stuttgart Germany Tel. +49-(0) 711-459-23328 Fax +49-(0) 711-459-23315 E-mail: cropsciences@uni-hohenheim.de http://www.uni-hohenheim.de/cropsciences

Block Periods 2013/2014

	Block	Period
Winter Semester	1	14.10. – 06.11.2013
	2	07.11. – 29.11.2013
	3	02.12. – 20.12.2013 + 07.01. – 08.01.2014
	4	09.01. – 31.01.2014
	5	03.02. – 25.02.2014
Summer Semester	6	01.04. – 25.04.2014
	7	28.04. – 21.05.2014
	8	22.05. – 06.06.2014 + 16.06. – 24.06.2014
	9	25.06. – 18.07.2014
	10	21.07. – 12.08.2014

Important Advice for the Personal Time-Table: Blocked modules will usually take place Monday to Friday from 2 p.m. to 6 p.m. Non-blocked modules will usually be taught in the morning. This shall enable students to combine blocked and unblocked modules. (Because of the limited number of lecture rooms, this aim can unfortunately not always be kept.) While working out your personal time-table, please be aware of the following facts: the morning is assigned for the personal preparation of the blocked modules too and the block periods B4, B5 and B9, B10 will have a relevant overlapping with the first examination period of the un-blocked modules!

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

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 *(draft!)*

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

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

Blocked Modules Summer Semester 2014

20.08.2013

●= Compulsory ◖ = Semi-elective ○= Elective

Period / Study Course	6 (17 days) 01.04. - 25.04.2014 (unbl: 07.04.!)	7 (17 days) 28.04. – 21.05.2014	8 (17 days) 22.05. - 06.06.2014 + 16.06. - 24.06.2014	9 (17 days) 25.06. - 18.07.2014	10 (17 days) 21.07. - 12.08.2014	by Arrangement
M. Sc. AgEcon		● **4101-410** (Lippert) Environmental and Resource Economics	● **4201-410** (Grethe) Agricultural and Food Policy	◖ 4903-500 (Birner) Policy Processes in Agric. + Nat. Resource Manag.	◖ **4903-470** (Birner) Qual. Research Methods … ◖ **4902-430 (**Brockmeier)	
M. Sc. AgriTropics	● **3803-470** (Asch) Interdisciplinary Practical Science Traíning (**AgriTropics only!**)	○ **4901-430** (Zeller) Rural Development Policy and Institutions ○ **3801-430** (Cadisch) Integrated Agricultural Production Systems	○ **4201-410** (Grethe) Agricultural and Food Policy ○ **3802-420** (Sauerborn) Biodiversity, Plant and Animal Gen. Resources ○ **4403-550** (Müller, J.) Postharvest Technology of Food and Bio-Based Prod. ○ **4802-450** (Dickhöfer) Quant. Meth. in Anim. Nutrition + Veget. Scienc.	○ **4403-470** (Müller, J.) Renewable Energy f. Rural Areas ○ **4801-420** (Valle Zárate) Promotion of Livestock in Trop. Environments	○ **4902-430 (**Brockmeier) Food and Nutrition Security ○ **3803-430** (Asch) Ecophysiology of Crops in the T+S ○ **4602-450** (Hölzle) Food Safety a. Drinking Water Quality related to Zoonoses in the T+S ~~○ **3501-480** (Melchinger) Breed. of Trop., Ornamental, and Vegetable Plants~~	
M. Sc. Crop Sciences	○ **4407-430** (Griepentrog) Precision Farming		◖ **3602-460** (Gerhards) Information Technologies and Expert Systems ..	○ **3501-480** (Melchinger) Breed. of Trop., Ornamental, and Vegetable Plants	○ **3603-500** (Zebitz) Exercises in Biological Pest Control	
M. Sc. EnviroFood	◖ **3102-440** (Kandeler) Environmental Pollution and Soil Organisms	● **3103-450** (Streck) Spatial Data Analysis with GIS	◖ **3802-420** (Sauerborn) Biodiversity, Plant and Animal Gen. Resources ◖ **4403-550** (Müller, J.) Postharvest Technology of Food & Bio-Based Prod.	● **3103-460** (Streck) Environmental Science Project ◖ **4403-470** (Müller, J.) Renewable Energy for Rural Areas		
M. Sc. EnvEuro (first year)	○ **3102-440** (Kandeler) Environmental Pollution and Soil Organisms	● **3103-450** (Streck) Spatial Data Analysis with GIS	◖ **3802-420** (Sauerborn) Biodiversity, Plant and Animal Gen. Resources ◖ **4201-410** (Grethe) Agricultural and Food Policy ○ **3101-460** (N.N.) Mapping Course…	○ **3103-460** (Streck) Environmental Science Project ○ **4403-470** (Müller, J.) Renewable Energy for Rural Areas ○**3101-430** (N.N.) Interdiscipl. Adv.Soil Science		
M. Sc. OrganicFood		● **4801-480** (Valle Zárate) Organic Livestock Farming and Products				

Please check module descriptions to find out how to register for participation in the respective module (https://www.uni-hohenheim.de/modulkatalog.html)**.**

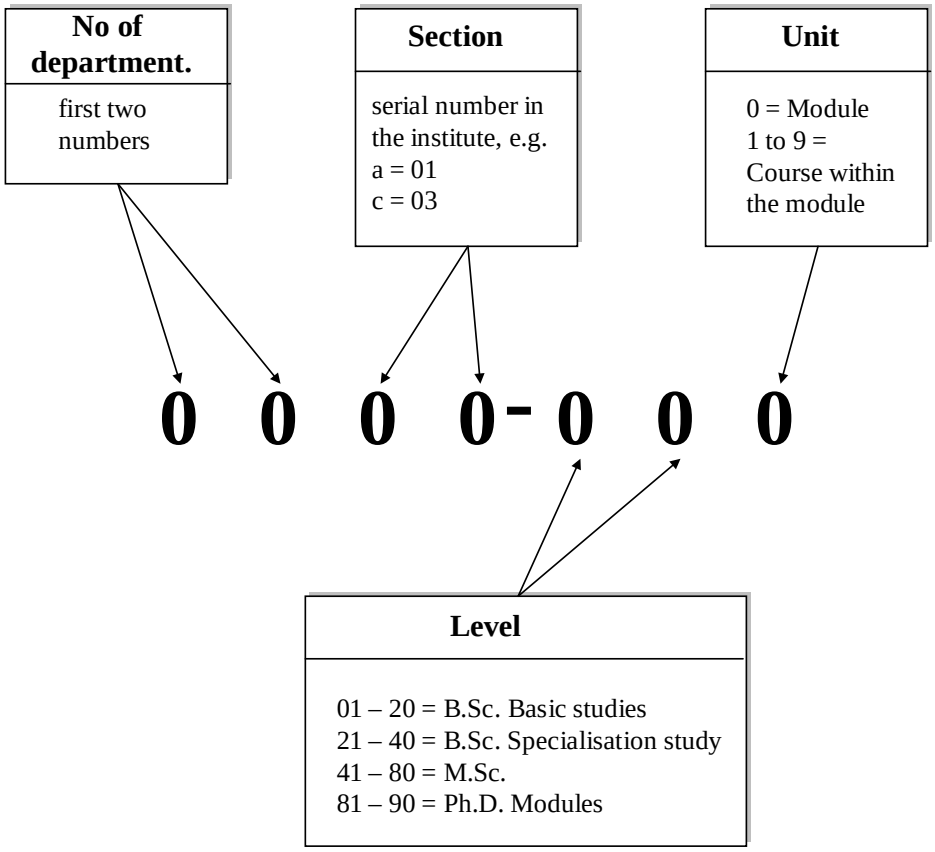
Unblocked Modules taught in English at the Faculty of Agricultural Sciences

● = Compulsory ◖ = Semi-elective ○ = Elective

AgEcon	Agri-Tropics	Crop Sciences	EnvEuro	Enviro-Food	Organic-Food	**Unblocked Modules in Winter Semester 2013/14**
○	○	○	◖	◖	○	**1201-410** (Wulfmeyer) Remote Sensing
						1201-580 (Wulfmeyer) Physics of the Earth System
-	-	-	●	-	-	**3005-410** (Fangmeier) Environmental Management in Europe ***(for EnvEuro only!)***
~~⊖~~	~~⊖~~	~~⊖~~		~~⊖~~	~~⊖~~	~~**3101-450** (Stahr) Major Pedological Field Trip (English + German)~~
○	○	○	○	○	○	**3102-420** (Kandeler) Project in Soil Sciences (English + German)
○	○	○	○	○	○	**3102-450** (Kandeler) Molecular Soil Ecology
○	○	○	○	○	○	**3301-450** (Müller, T.) Soil Fertility and Fertilisation in Organic Farming
○	○	○	○	○	○	**3301-470** (Müller, T.) Fertilisation and Appl. Soil Chemistry in the T+S (***e-learning***!)
○	○	◖		○	○	**3302-450** (Neumann) Plant Symbioses for Nutrient Acquisition
○	○	◖		○	○	**3302-460** (Ludewig) Plant Quality
○	○	●		○	○	**3401-470** (Claupein) Crop Physiology
○	●	○	●	○	○	**3402-420** (Piepho) Quantitative Methods in Biosciences
○	○	○		○	●	**3405-460** (Zikeli) Processing and Quality of Organic Food
○	○	○		○	●	**3405-470 (**Zikeli) Organic Food Systems and Concepts
-	-	-	-	-	●	**3405-500 (**Zikeli) Principles of Organic Food Systems ***(for EurOrganic only!)***
○	○	◖		○	○	**3501-470** (Melchinger) Selection Theory
		●				**3502-440** (Schmid) Methods of Scientific Working for Crop Sciences
○	○	◖		○	○	**3502-450** (Schmid) Population and Quantitative Genetics
○	○	◖		○	○	**3504-430** (Kruse) Seed Research
○	○	◖		○	○	**3601-450** (Vögele) Phytopathology
○	○	◖		○	○	**3602-450** (Gerhards) Molecular Aspects of Plant Protection
○	○	◖		○	○	**3603-480** (Zebitz) Entomology
○	○	○	◖	●	●	**4201-440** (Grethe) Economics and Environmental Policy
○	○	○		○	●	**4303-440** (I.V. Lemke) Social Conditions of Organic and Sustainable Agriculture
○	○	○	○	○	○	**4303-490** (I.V. Lemke) Ethics of Food and Nutrition Security
○	○					**4404-450** (Köller) Innovations in Agriculture
○	○	○	◖	◖	○	**4406-410** (Kranert) Waste Management and Waste Techniques
◖	○	○		○	○	**4904-410** (Berger) Agricultural Economics Seminar

AgEcon	Agri-Tropics	Crop Sciences	EnvEuro	Enviro-Food	Organic-Food	**Unblocked Modules in Summer Semester 2014** (April - July)
-	-	-	◖	-	-	~~**3005-420** (Fangmeier)Climate Change Impacts, Adaptation a. Mitigation **(*EnvEuro !)***~~
○	○	○	○	○	○	**3101-440** (Stahr) Soil Genesis, Classification and Geography (*English + German*)
~~⊖~~	~~⊖~~	~~⊖~~	~~⊖~~	~~⊖~~	~~⊖~~	~~**3101-450** (Stahr) Major Pedological Field Trip (*English + German*)~~
○	○	○	○	○	○	**3102-420** (Kandeler) Project in Soil Sciences (*English + German*)
			○	○		**3103-500** (Streck) Energy and Water Regime at the Land Surface
○	○	○	◖	○	○	**3301-470** (Müller, T.) Fertilisation and Appl. Soil Chemistry in the T+S (***e-learning!***)
○	○	○	○	○	○	**3401-450** (Claupein) Conservation Agriculture
○	○	○		○	●	**3401-460** (Claupein) Organic Plant Production
○	○	●		○	○	**3402-450** (Piepho) Advanced Statistical Methods for Metric and Catagorical Data
○	○	○		○	○	**3405-450** (Zikeli) Problems and Perspectives of Organic Farming
○	○	○		○	●	**3405-490** (Zikeli) Project in Organic Agriculture and Food Systems
○	○	◖		○	○	**3501-450** (Melchinger) Breeding Methodology
○	○	○		○	○	**3603-420** (Zebitz) Crop Protection in Organic Farming
○	○	◖		○	○	**3703-430** (Wünsche) Crop – Environment Interactions
	○					**3803-490** (Asch) Excursion to the Tropics and Subtropics
●	○	○		○	○	**4202-450** (Becker. T.) Microeconomics
○	○	○		○	●	**4202-460** (Becker. T) Markets and Marketing of Quality Food
◖	○	○		◖	○	**4303-470** (I.V. Lemke) Gender, Nutrition, and Right to Food
○	○	○		◖	○	**4303-480** (I.V. Lemke) Global Nutrition
-	●	-	-	-	-	**4903-460** (Birner) Methods in Interdisciplinary Collaboration ***(for AgriTropics only!)***

Explanation of Module Code



Lecture Periods

SS 14	**First day of blocked modules:**	(14. KW) Tuesday, 01.04.2014
	First day of un-blocked modules:	(15. KW) Monday, 07.04.2014
	Last day of un-blocked modules:	(29. KW) Saturday,19.07.2014
	Last day of blocked modules:	(33. KW)Tuesday, 12.08.2014
WS 14/15	**First day of un-blocked modules:**	(42. KW) Monday, 13.10.2014
	First day of blocked modules:	(42. KW) Monday, 13.10.2014
	Last day of un-blocked modules:	(6. KW) Saturday, 07.02.2015
	Last day of blocked modules:	(7. KW) Friday, 13.02.2015

Free of lectures: Easter holidays: 18.04. – 21.04.2014, Labour Day: 01.05.2014, Ascension Day: 29.05.2014, Pentecost holidays: 10.06.2014 –14.06.2014 (except excursions), Feast of Corpus Christi: 19.06.2014. The "Dies Academicus" (04.07.2014) will be free of lectures too!

Examination periods in summer semester 2013

B.Sc. and M.Sc. period 1:	calendar week 30 to 32
B.Sc. and M.Sc.: period 2:	calendar week 39 to 41
Deadline for the registration for exams:	is fixed by the examination office

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

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**).