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HOHENHEIM



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CURRICULUM

# Agricultural Sciences in the Tropics and Subtropics

Master of Science

Faculty of Agricultural Sciences | As of August 2025

## Preamble

This curriculum provides applicants and students as well as teaching and administrative staff with comprehensive information about the M.Sc. program "Agricultural Sciences in the Tropics and Sub-tropics". It contains information on the program structure and summarizes the most important exam regulations (issued the 13<sup>th</sup> May 2025).

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 included in printed materials with a delay. For this reason, all information is supplied without liability.

If in doubt, please refer to the coordinator of the program ([agritropics@uni-hohenheim.de](mailto:agritropics@uni-hohenheim.de)) to obtain up-to-date information. For up-to-date module descriptions please refer to the website at [uni-hohenheim.de/en/module-catalogue](http://uni-hohenheim.de/en/module-catalogue). Time schedules and lecture halls for all courses are displayed in the Course Catalog of the University of Hohenheim, available at the beginning of each semester on the University's homepage: [uni-hohenheim.de/en/course-catalog](http://uni-hohenheim.de/en/course-catalog)

## Imprint

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## Table of Contents

The Master's Program Agricultural Sciences in the Tropics and Subtropics	4
<b>1 Program Objectives</b>	<b>4</b>
<b>2 Degree and Career Perspectives</b>	<b>4</b>
<b>3 Program Design</b>	<b>5</b>
3.1 Program overview of the single degree at UHOH	5
3.2 Program overview of the double degree with CZU	6
3.2.1 First Year UHOH – Second Year CZU	6
3.2.2 First Year CZU – Second Year UHOH	7
3.2.3 Transformation of grades between the partner universities CZU and UHOH	8
3.3 Compulsory Modules at UHOH	8
3.4 Suggestions for elective modules	9
<b>4 Artificial Intelligence and Data Science in Hohenheim (AIDAHO)</b>	<b>10</b>
<b>5 Key Contacts for the AgriTropics Program</b>	<b>11</b>
5.1 AgriTropics Program Director	11
5.2 Academic Counselling	11
5.3 AgriTropics Program Coordinator	11

# The Master's Program Agricultural Sciences in the Tropics and Subtropics

## 1 PROGRAM OBJECTIVES

The population of our world is more than 8 billion and quickly rising. To provide food for ourselves and our children in the years to come, we will need to understand and manage ever more complex and diverse agricultural and ecological systems to enable more efficient and sustainable food production in a way that conserves resources. This will be particularly true for developing countries in tropical and sub-tropical regions where the population is increasing most rapidly.

Any attempts to tackle the problems must involve the application of all branches of Agricultural Sciences in ways that will carefully analyze existing food production systems, develop sound strategies to safeguard natural resources, and provide new, sustainable, and adaptable techniques for farmers to use.

To meet this demand, the master's program "Agricultural Sciences in the Tropics and Subtropics" (AgriTropics) was developed in cooperation with international agricultural research and development organizations. A program advisory board meets regularly to support the program in its effort to educate students for the challenging tasks in international agriculture and resource conservation. Students of all nationalities acquire analytical skills and multidisciplinary competence to address current and future problems in agricultural ecosystems.

The M.Sc. Program "Agricultural Sciences in the Tropics and Subtropics" was awarded by the German Academic Exchange Service (DAAD) with the quality label "TOP 10 International Master's Degree Courses Made in Germany" in 2008.

Since 2022 this M.Sc. program is offered as an optional double degree in cooperation with the Czech University of Life Sciences in Prague. Students can opt to study the first year at the University of Hohenheim and the second year Czech University of Life Sciences in Prague, and vice versa.

## 2 DEGREE AND CAREER PERSPECTIVES

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 continue with a Ph.D./doctoral program if the total grade is above average.

Double degree students will obtain two full M.Sc. degree certificates, a Master of Sciences in "Agricultural Sciences in the Tropics and Subtropics" from the University of Hohenheim, and a Master of Sciences in "Agricultural Sciences and Farming Systems in the Tropics and Subtropics" from the Czech University of Life Sciences.

Graduates have very good chances on the international job market. Possible fields of work, depending on the profile focus, are e.g.:

- International and national agricultural research centers (CGIAR or departmental research)
- Ministries for development cooperation, land or environmental protection
- Development cooperation organizations
- Consulting firms
- International or national non-governmental organizations

- Universities and other research institutions
- Businesses in the agricultural sector
- EU institutions

Examples of AgriTropics graduates can be found here: [uni-hohenheim.de/agritropics-alumni](http://uni-hohenheim.de/agritropics-alumni)

In the “**Study Compass**“ you will find a comprehensive compilation of important information for your studies.

Information about modules, examinations, master’s thesis, plan of blocked modules, AIDAHO program, additional offers, and much more is available there.

Make sure to consult the Study Compass and get familiar with the regulations!



### 3 PROGRAM DESIGN

The two-year study program has a scope of 120 ECTS credits. The language of instruction is English, and the program can only be started in October (winter semester) each year.

Students can opt for a single degree at the University of Hohenheim (UHOH) or a double degree in cooperation with the Czech University of Life Sciences in Prague (CZU).

#### 3.1 Program overview of the single degree at UHOH

1. Semester (unblocked)	2. Semester (blocked)	3. Semester (unblocked)	4. Semester
<b>4905-420</b> (J.Silva) Crop Production Systems (6 credits)	<b>4907-440</b> (Asch) Interdisciplinary Practical Science Training (7.5 credits)	Elective module (6 credits)	Master Thesis (30 credits)
<b>4906-410</b> (Graß) Ecology and Agroecosystems (6 credits)		Elective module (6 credits)	
<b>4903-460</b> (Birner) Methods in Interdisciplinary Collaboration (6 credits)	Elective module (7.5 credits)	Elective module (6 credits)	
<b>4907-410</b> (Asch) Natural Resource Use and Conservation in the T. + S. (6 credits)	Elective module (7.5 credits)	Elective module (6 credits)	
<b>4908-440</b> (Roesel) Livestock Production Systems and Development (6 credits)	Elective module (7.5 credits)	Elective module (6 credits)	

The single degree at UHOH consists of 14 modules totaling 90 credits (including one with practical science training) and one research semester (30 credits), during which a master’s thesis has to be done. Six of the modules are compulsory (37.5 credits).

To create an individual study profile, students must complete eight elective modules (at least 52.5 credits). These modules can be chosen from the complete catalog of the modules of all Master’s programs of the Faculty of Agricultural Sciences (see: [uni-hohenheim.de/en/module-catalogue](http://uni-hohenheim.de/en/module-catalogue)). Modules

can also be chosen from other study programs at the University of Hohenheim, or at other universities in Germany or abroad, insofar as these are approved by the examination board.

Upon application, examinations taken at other universities can be recognized if the request is submitted within the first three months of the first semester in Hohenheim (deadlines: 31 December or 30 June).

The modules of the winter semester last the full length of the semester (unblocked). The modules of the summer semester 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. (For the sequences of the blocked modules see block plan on the „[Study Compass](#)“ website)

### 3.2 Program overview of the double degree with CZU

#### 3.2.1 First Year UHOH – Second Year CZU

Students starting at UHOH and opting for the double degree with CZU have to complete the same compulsory modules in the first two semesters like the single-degree students, and in addition they have to join two online courses in the second semester offered by CZU in preparation of the master’s thesis (5 credits). Furthermore, two elective modules (15 credits) must be completed in the second semester. The data collection of the thesis is undertaken in the summer break, under the guidance of the thesis supervisor of CZU, before moving on to the host university in Prague. The thesis will be jointly supervised by a professor from CZU (main supervisor) and a professor at UHOH (second supervisor).

In September in their fourth semester students must take the state exam at CZU. The thesis defense will be part of this exam.

1. Semester (UHOH) (unblocked)	2. Semester (UHOH) (blocked)	Summer break (CZU)	3. Semester (CZU)	4. Semester (CZU)
<b>4905-420</b> (J.Silva) Crop Production Systems (6 credits)	<b>4907-440</b> (Asch) Interdisciplinary Practical Science Training (7.5 credits)	Data collection = practical training for the Thesis (5 credits)	Orientation meeting (1 credit)	Elective module(s) (15 credits)
<b>4906-410</b> (Graß) Ecology and Agroecosystems (6 credits)			Economics of Farming Systems (5 credits)	
<b>4903-460</b> (Birner) Methods in Interdisciplinary Collaboration (6 credits)	<b>3000-410</b> Portfolio module including “Topic Selection and Research Plan Proposal” (2 credits) and “Research Design Finalization” (3 credits) offered online by CZU, plus 2,5 credits by other activities		Institutional and Behavioral Economics (5 credits)	
<b>4907-410</b> (Asch) Natural Resource Use and Conservation in the Tropics + Subtropics (6 credits)	Elective module (7.5 credits)		Data Analysis, Interpretation and Visualization (5 credits)	Thesis submission and State exams, including oral Thesis defense (15 credits)
<b>4908-440</b> (Roesel) Livestock Production Systems and Development (6 credits)	Elective module (7.5 credits)		Elective module(s) (9 credits)	

### 3.2.2 First Year CZU – Second Year UHOH

Students from CZU coming to UHOH for the second year of their studies must complete one compulsory module in their third semester and choose elective modules totaling to at least 29 credits.

In September in their fourth semester students must take the state exam at CZU. The thesis defense is not part of this exam, it can be done later

1. Semester (CZU)	2. Semester (CZU)	Summer break	3. Semester (UHOH)	4. Semester (UHOH)	
Orientation meeting (1 credit)	Global Food Security (5 credits)	Free time to move to Germany	4903-460 (Birner) Methods in Interdisciplinary Collaboration (6 credits)	Elective module (5 credits)	
Tropical Crop Management (5 credits)	Human Nutrition and Food-borne Diseases (5 credits)			Elective modules (24 credits)	Data collection, Data Analysis, Interpretation and Visualization, Thesis Submission, Thesis defense (25 credits)
Animal husbandry (5 credits)	Principles of Food Preservation (5 credits)				
Economics of Farming Systems (5 credits)	Seminar "Planning and Development of Research Design" (1 credit)				
Institutional and Behavioural Economics (5 credits)	Seminar "Data Presentation and Communication Skills" (1 credit)				
Seminar "Introduction to Agricultural Research" (1 credit)	Research Design Finalisation (3 credits)		Elective modules (10 credits)		
Seminar "Principles of Data Processing and Visualisation" (1 credit)	Elective modules (10 credits)				
Topic Selection and Research Plan Proposal (2 credits)					
Elective module (5 credits)					

### 3.2.3 Transformation of grades between the partner universities CZU and UHOH

For students following the double degree with the Czech University of Life Sciences in Prague (CZU) the following transformation of grades applies:

Transformation of UHOH grades into CZU grades:

UHOH		CZU	
A	Very good	1	Excellent
A-			
B+			
B	Good	2	Very good
B-			
C+			
C			
C-	Medium	3	Good
D+			
D	Pass	3	Good
D			
F	Fail	4	Failed

Transformation of CZU grades into UHOH grades:

CZU		UHOH	
1	Excellent	A	Very good
2	Very good	B-	Good
3	Good	D	Medium
4	Failed	F	Fail

Students must send the transcripts of records of the home university to the host university and vice versa to have the grades and credits included in the respective transcript of record of the other university.

### 3.3 Compulsory Modules at UHOH

Sem	Code	Name of Module	Duration	Credits	Professor
1	4905-420	Crop Production Systems	1 semester	6	J. Silva
1	4906-410	Ecology and Agroecosystems *	1 semester	6	Graß
1	4907-410	Natural Resource Use and Conservation in the Tropics and Subtropics	1 semester	6	Asch
1	4903-460	Methods in Interdisciplinary Collaboration	1 semester	6	Birner
1	4908-440	Livestock Production Systems and Development	1 semester	6	Rösel
2	4907-440	Interdisciplinary Practical Science Training*	SS, Block 1	7.5	Asch

\* The number of places is limited but places for AgriTropics students are guaranteed. However, you are requested to register for participation online via ILIAS in the week before the lecture period starts.

### 3.4 Suggestions for elective modules

Sem.	Code	Name of Module	Duration	Credits	Professor
1-4	3000-410	Portfolio-Module (Master)	open	1 – 7.5	Kruse, M.
1-2	4907-490	Excursion to the Tropics and Subtropics ( <i>every other year, next one planned for autumn 2026</i> )	partly blocked	6	Asch
1-4	3000-420	UNIcert® III English for Scientific Purposes	open	7.5	Kruse, M.
1-4	3000-560	Deutsch als Fremdsprache UNIcert® II (B2)	open	7.5	Hölzle
1/3	5107-4X0	Principles of Data Science <sup>*(AIDAHO-Basic)</sup>	1 Semester	6	Dimpfl
2	4905-430	Integrated Agricultural Production Systems	SS, Block 2	7.5	Asch
2	4905-470	Biodiversity and Genetic Resources	SS, Block 2	7.5	Martin
2	4403-550	Post-Harvest Technology of Food and Bio-Based Products	SS, Block 2	7.5	Müller, J.
2	4908-480	Animal Breeding for Sustainable Development (currently not offered)	SS, Block 2	7.5	Rösel
2	4403-470	Renewable Energy for Rural Areas	SS, Block 3	7.5	Müller, J.
2	4907-430	Crop Production Affecting the Hydrologic Cycle	SS, Block 3	7.5	Asch
2	4907-420	Ecophysiology of Crops in the Tropics and Subtropics	SS, Block 4	7.5	Asch
2	4908-420	Promotion of Livestock in Tropical Environments	SS, Block 4	7.5	Rösel
2	4905-460	Modeling of Agroecosystems	1 semester	6 (!)	Asch
2	4407-480	Introduction to Machine Learning in Python (online) <sup>*(AIDAHO-Basic)</sup>	e-learning	7.5	Stein
2/3	3409-480	Fertilization and Soil Fertility Management in the Tropics and Subtropics (online)	e-learning	7.5	Müller, T.
3	3402-420	Quantitative Methods in Biosciences <sup>*(AIDAHO-Methods)</sup>	1 semester	6	Piepho
3	3402-480	Environmental and Ecological Statistics	1 semester	6	Piepho
3	3090-410	Organic Farming in the Tropics and Subtropics	1 semester	6	Zikeli
3	4301-470	Agricultural Knowledge Systems and Advisory Services	1 semester	6	Knierim
3	4302-420	Ethical Reflection on Food and Agriculture *	1 semester	6	Bieling
3	4302-500	Transformation Studies in Agri-Food Systems	1 semester	6	Bieling
3	4303-420	Communicating Sustainability in Agri-Food Systems *	1 semester	6	Seufert
3	4403-440	Irrigation and Drainage Technology	1 semester	6	Müller, J.
3	4407-510	Intelligent Robotics for Agriculture	1 semester	6	Stein
3	4611-470	Current Infectious Diseases of Crops and Livestock	1 semester	6	Kube
3	4901-470	Quantitative Methods in Economics <sup>*(AIDAHO-Methods)</sup>	1 semester	6	Zeller
3	4901-420	Poverty and Development Strategies	1 semester	6	Zeller
3	4902-430	Food and Nutrition Security	1 semester	6	Boysen-Urban
3	4903-500	Policy Processes in Agriculture and Natural Resource Management	1 semester	6	Birner
3	4905-410	Weltwirtschaftspflanzen und Weidewirtschaft in den Tropen und Subtropen (Ger. + Eng.)	1 semester	6	Silva
3	4908-450	Organic Livestock Farming and Products	1 semester	6	Rösel

Sem.	Code	Name of Module	Duration	Credits	Professor
3	4607-480	Hot Topics and Advanced Methods in Animal Genetics and Breeding	1 semester	6	Bennewitz
3	5107-410	Introduction to Applied Data Science <small>*(AIDAHO Basic)</small>	1 semester	6	R. Jung
4	3101-460	Soils of the World - Formation, Classification, and ... (every other year: 2027, 2029...) *	SS, Block 1	7.5	Herrmann
4	4903-510	Innovations for Sustainable Agri-Food Systems	1 semester	6	Birner
4	4901-430	Rural Development Policies and Institutions *	1 semester	6	Zeller
4	4901-480	Monitoring and Evaluation of Rural Development Projects	1 semester	6	Zeller
4	5703-510	Entrepreneurship	1 semester	6	Kuckertz

WS = winter semester, SS = summer semester

\* Limited number of participants. Please register for participation in ILIAS

\*\* See module catalogue for prerequisites necessary for attendance

## 4 ARTIFICIAL INTELLIGENCE AND DATA SCIENCE IN HOHENHEIM (AIDAHO)

The program is designed for students of all faculties. The aim of AIDAHO is to increase the expertise of its participants in the fields of Artificial Intelligence (AI), Data Science and Scientific Computing. Students can enroll in the certificate in addition to their main course of study: [aidaho.uni-hohenheim.de/en](https://aidaho.uni-hohenheim.de/en).

### How to achieve the certificate

To successfully complete the program, students must pass at least five AIDAHO modules (30 ECTS).

- There are **three mandatory basic modules** that all participants must complete. The courses of these modules teach basic programming skills and statistical methods.
- In the **two semi-elective specialization modules** students can deepen their *methodological skills* and choose to work on data projects in *application* seminars.

For better planning, modules which are part of the AIDAHO program, are marked across the curriculum with an asterisk and a note whether it is a basic, an application or a methodological module.

## 5 KEY CONTACTS FOR THE AGRITROPICS PROGRAM

### 5.1 AgriTropics Program Director

**Prof. Dr. Regina Birner**, University of Hohenheim  
Department for Social and Institutional Change in Agricultural Development (490c)  
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### 5.2 Academic Counselling

Academic counsellors advise students on their choice of modules to design their individual study profile and to support smooth and focused study progress. If a student wants to select modules offered by a faculty other than the Faculty of Agricultural Sciences, they must be approved by the academic counsellor or the program coordinator beforehand. Students can contact these counsellors at any time and ask for an appointment.

Academic counsellors for AgriTropics and their respective research focus are:

- **Prof. Dr. Folkard Asch**, Management of Crop Water Stress in the Tropics and Subtropics, [fa@uni-hohenheim.de](mailto:fa@uni-hohenheim.de)
- **Prof. Dr. Ingo Graß**, Ecology of Tropical Agricultural Systems, [ingo.grass@uni-hohenheim.de](mailto:ingo.grass@uni-hohenheim.de)
- **Prof. Dr. Manfred Zeller**, Rural Development Theory and Policy, [manfred.zeller@uni-hohenheim.de](mailto:manfred.zeller@uni-hohenheim.de)
- **Prof. Dr. Thomas Berger**, Land Use Economics in the Tropics and Subtropics, [i490d@uni-hohenheim.de](mailto:i490d@uni-hohenheim.de)
- **Prof. Dr. Regina Birner**, Social and Institutional Change in Agricultural Development, [Regina.Birner@uni-hohenheim.de](mailto:Regina.Birner@uni-hohenheim.de)
- **Prof. Dr. Joachim Müller**, J., Agricultural Engineering in the Tropics and Subtropics, [joachim.mueller@uni-hohenheim.de](mailto:joachim.mueller@uni-hohenheim.de)

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