

# Study Guide

Bachelor's and Master's Programme in Agricultural  
Sciences 2022/2023



This guide details the **2016 regulations for Bachelor's and Master's programmes** in Agricultural Sciences.

The 2022/23 Study Guide includes the following subject lists:

- Course list for the first, second and third years of the Bachelor's programme in Agricultural Sciences
- Course list for the Master's programme in Agricultural Sciences

The current course lists and all regulations can be downloaded from [www.usys.ethz.ch/studium/agrarwissenschaften/dokumente](http://www.usys.ethz.ch/studium/agrarwissenschaften/dokumente)

Binding details on courses and exams are listed in the Course Catalogue, [www.course-catalogue.ethz.ch](http://www.course-catalogue.ethz.ch)



# Welcome!

Dear Agricultural Sciences students

Welcome to ETH Zurich. I am delighted that you have decided to study Agricultural Sciences. Over the course of this degree, we will provide you with the scientific foundation on which the further development of agricultural systems and their management is based. The focus is on current issues relating to agriculture and food production.

Once you have completed your studies, you will be able to analyse the various components of the World Food System, which aims to ensure the sustainable use of natural resources while developing tailor-made solutions for both Switzerland and various regions around the world.

This document will assist you throughout your journey. It serves as a targeted guide through your studies so you can select the right courses using course lists, plan your internship or find the right contacts.

I wish you an exciting and successful time as a student of Agricultural Sciences.

A handwritten signature in blue ink, appearing to read 'E. Frossard', located above the printed name.

Emmanuel Frossard  
Director of Studies for Agricultural Sciences

<b>1</b>	<b>Agricultural Sciences at ETH Zurich</b>	<b>1</b>
1.1	Studying Agricultural Sciences	1
1.2	Professional Profile	1
1.3	Programme Structure	1
<b>2</b>	<b>Bachelor's Programme</b>	<b>2</b>
2.1	Bachelor's Programme and Qualification Profile	2
2.2	Structure of the Programme	3
2.3	Description of each subject category	4
2.3.1	Basic Courses I – 57 CP	5
2.3.2	Basic Courses II – 27 CP	5
2.3.3	Agricultural Courses – 55 CP	5
2.3.4	Excursions – 3 CP	5
2.3.5	Methodological Courses – 8 CP	6
2.3.6	Electives – 6 CP	6
2.3.7	Agricultural Internship – 10 CP	6
2.3.8	Bachelor's thesis – 14 CP	6
2.4	Bachelor's programme, divided by semester	7
2.4.1	List of First-year Courses	9
2.4.2	List of Second-year Courses	10
2.4.3	List of Third-year Courses	11
2.5	Bachelor's Degree	12
2.6	Performance Assessment	12
2.6.1	Definition and general notes	12
2.6.2	Grade weighting for block exams	14
2.6.3	Options to make up credits in the event of failure to pass assessments	15

<b>3</b>	<b>Master's Programme</b>	<b>16</b>
3.1	Master's Programme and Qualification Profile	16
3.1.1	Admission	17
3.1.2	Excellence Scholarship & Opportunity Programme	17
3.2	Programme Structure	18
3.2.1	Majors (40 credits)	18
3.2.2	Minors (1x or 2x 10 credits)	20
3.2.3	Electives (10 credits)	21
3.2.4	Professional Internship (30 credits)	22
3.2.5	Master's Thesis (30 credits)	22
3.2.6	Master's Degree	23
3.3	Student Exchange	23
3.4	2021/22 Master's programme list of subjects	24
<b>4</b>	<b>Continuing Education</b>	<b>28</b>
4.1	Teaching Certificate	28
4.2	Doctorate	28
<b>5</b>	<b>General information and tips</b>	<b>29</b>
5.1	Websites relevant to the programme	29
5.2	Correspondence	30
5.3	Academic Calendar	30
5.4	Financial	31
5.5	Military Service	31
5.6	Changing to a different degree programme	32
5.7	Recognition of study achievements	32
5.8	Code of Conduct	32
<b>6</b>	<b>Important information about D-USYS</b>	<b>33</b>
<b>7</b>	<b>Advice and contacts</b>	<b>34</b>

# 1 Agricultural Sciences at ETH Zurich

## 1.1 Studying Agricultural Sciences

The Master's degree programme in Agricultural Sciences provides students with in-depth knowledge of agricultural sciences with a focus on sustainable global food production and sustainable use of natural resources. Agricultural Sciences involves any issues concerning the primary production of human food and animal feed, as well as renewable raw materials. It includes a host of sub-areas from other scientific disciplines, but agricultural sciences also has its own independent fields. They are commonly classified into **plant sciences**, **animal sciences** and **agricultural economics**.

## 1.2 Professional Profile

The programme in Agricultural Sciences at ETH Zurich is very diverse, offering a wide variety of professional perspectives. Agricultural scientists are primarily active in the following areas: consulting and education, associations and networks, cantonal and federal offices, as well as research and international development. For more information, including specific examples of graduates, see the following document (in German): [www.ethz.ch/content/dam/ethz/special-interest/usys/department/documents/studium/agrarwissenschaften/2017\\_Berufsbilder\\_Agrar\\_web\\_einzel.pdf](http://www.ethz.ch/content/dam/ethz/special-interest/usys/department/documents/studium/agrarwissenschaften/2017_Berufsbilder_Agrar_web_einzel.pdf)

## 1.3 Programme Structure

The programme in Agricultural Sciences is integrated into the Department of Environmental Systems Science. The programme is structured in accordance with the model defined by the Bologna Declaration of 1999 (see graphic the "The Level Model"). The first level comprises the three-year Bachelor's programme, which provides instruction in the basics of natural, social and agricultural sciences. Upon completion of the programme, students receive a Bachelor's degree. The Bachelor's degree provides admission into the second level, the Master's programme.

The Master's programme provides in-depth expertise in agricultural sciences and students receive a Master's degree as a professional qualification upon completion. An academic qualification is bestowed upon completion of the third level, the doctoral programme, where successful candidates receive a doctorate.

### The Level Model

Level	Description	Approx. duration	Title	Qualification
1	Bachelor's programme	3 years	Bachelor of Science ETH	No professional qualification
2	Master's programme	2 years	Master of Science ETH	Professional qualification
3	Doctoral programme	3 years	Dr. Sc. ETH Zurich	Academic qualification

# 2 Bachelor's Programme

## 2.1 Bachelor's Programme and Qualification Profile

The three-year Bachelor's programme teaches the basics of natural, social and agricultural sciences. The aim of the Bachelor's degree programme in Agricultural Sciences is to provide a broad knowledge of various agricultural disciplines, which are grounded in the sciences and social sciences. The specialised knowledge acquired during the course of study is deepened in practice through excursions and an agricultural internship at a farm. The Bachelor's degree entitles students to undertake a Master's degree, with the option to participate in intra- and inter-university departmental exchange. The professional qualification is achieved through the Master's degree.

### Qualification profile

#### 1. Domain-specific knowledge and understanding

Graduates with a Bachelor's degree in Agricultural Sciences

- have a good grounding in mathematics, chemistry, biology, physics, computer science and environmental systems;
- have basic knowledge of economics, political science and law;
- have mastered mathematical and statistical analysis and optimisation procedures;
- are familiar with basic laboratory techniques;
- know the basics of agricultural systems and the farming production systems and methods in Switzerland and other countries/regions;

possess specialist knowledge in the following areas:

- Sustainable production of safe and high-quality food
- Crops and fodder plants: cultivation, plant nutrition, crop protection, genetics
- Livestock: Genetics, nutrition, physiology, behaviour, husbandry, health
- Agricultural economics: Agricultural economics, market policy, management, marketing.

## 2. Skills

### a) Analytical skills

Graduates with a Bachelor's degree in Agricultural Sciences

- can analyse, describe, understand and explain agricultural ecosystems in Switzerland and other countries/regions;
- are able to recognise agricultural issues at the industrial and regional level;
- can analyse and describe complex ecological, social, economic and ethical issues of the world food system.

### b) Development skills

Graduates with a Bachelor's degree in Agricultural Sciences

- can develop solutions to agricultural problems at the industrial and regional level;
- are able to implement laboratory techniques to address agricultural issues;
- can develop application-oriented solutions for safe and sustainable agricultural and food production of the world food system;
- are able to address agricultural issues independently and present results according to scientific conventions in the form of reports or talks.

## 3. Personal and social competences

Graduates with a Bachelor's degree in Agricultural Sciences

- cultivate a critical approach to information, and are able to summarise and link significant points from various sources;
- know the basics of project and teamwork and are able to work in teams;
- can apply their broad theoretical knowledge to address practical issues;
- are able to present their knowledge in written and spoken form.

A detailed description of the qualification profile can be found online at:

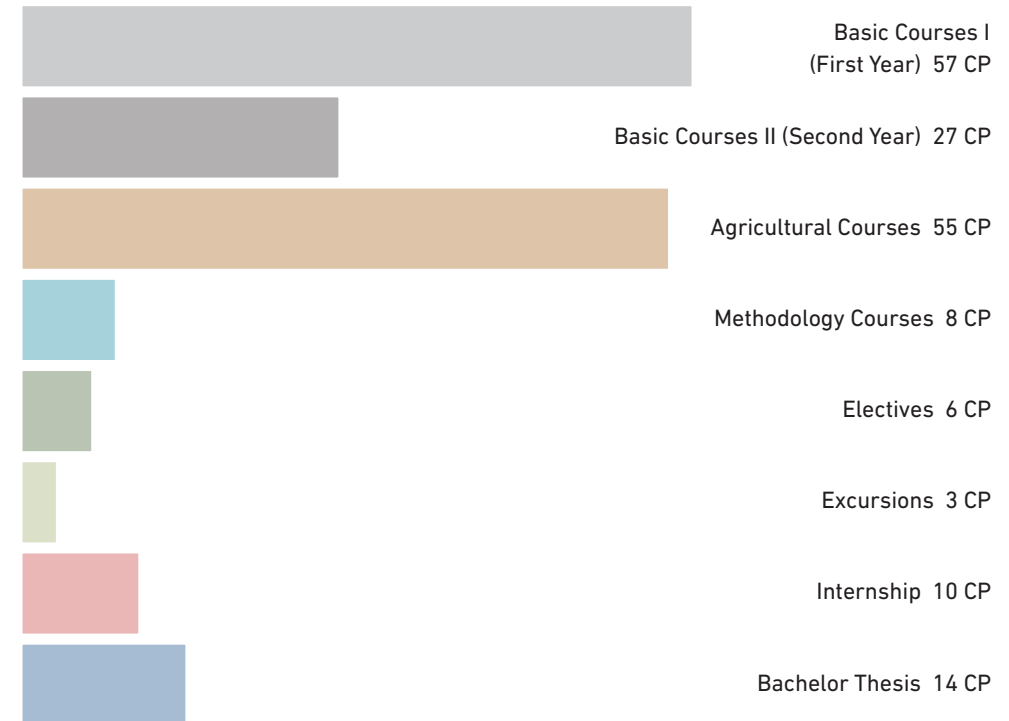
[www.ethz.ch/content/dam/ethz/special-interest/usys/departement/documents/studium/agrarwissenschaften/Qualifikationsprofil\\_Agrarwissenschaften\\_BSc\\_MSc\\_de\\_271015.pdf](http://www.ethz.ch/content/dam/ethz/special-interest/usys/departement/documents/studium/agrarwissenschaften/Qualifikationsprofil_Agrarwissenschaften_BSc_MSc_de_271015.pdf)

## 2.2 Structure of the Programme

The Bachelor's programme comprises natural, social and agricultural science subjects with a total of 180 credits (CP). The Bachelor's programmes in Agricultural Sciences, Environmental Sciences and Food Science are largely similar in the first year. It is possible to change programme after the first academic year; in most cases without additional requirements.

## 2.3 Description of each subject category

The 180 CP required for the Bachelor's diploma are to be acquired as shown in the graphic and in the categories and subcategories listed below. For further details, see [BSc Regulations](#).



### 2.3.1 Basic Courses I – 57 CP

(First Year Examinations Courses)

This category comprises the courses covered by the first-year examinations (51 CP) and further basic courses (6 CP) studied in the first year. These courses focus on the basics of mathematics, natural sciences, social sciences and agricultural sciences. The further basic courses are compulsory but not part of the first-year examination. The subjects from the Basic Subjects I category, which are tested during the first-year examinations, must be completed within two years.

### 2.3.2 Basic Courses II – 27 CP

The second year of study focuses on further basic mathematical and scientific knowledge, as well as basic agricultural knowledge and skills, which are essential for all areas of agricultural sciences. The basic agricultural science subjects impart a background that is relevant for every discipline within agricultural sciences (economics, animals, plants). A selection of relevant subjects is tested in a single block after the third semester.

### 2.3.3 Agricultural Courses – 55 CP

The second and third year of study introduce students to **specialist areas within agricultural sciences**. They serve to expand and deepen students' understanding across the three subject areas that make up agricultural sciences (**agricultural economics, plant sciences and animal sciences**), providing ideal preparation for the Master's programme. A total of 17 or 19 credits are earned from each of the areas. In the second year, all the courses are compulsory, while in the third year, students can choose from a wide range of courses.

- Agricultural Basic Courses (6 CP)
- Agricultural Fields (49 CP)
  - Agricultural Economics (15 KP)
  - Plant Sciences (19 KP)
  - Animal Sciences (15 KP)

### 2.3.4 Excursions – 3 CP

During excursions, students apply the information acquired in lectures and self-study to practice and research. They analyse various issues, expand and deepen topics learned in lectures and discuss their results and findings with their fellow students, teachers and excursion partners. Excursions are offered in the second, fourth and sixth semesters.

### 2.3.5 Methodological Courses – 8 CP

During the fourth and fifth semesters, these courses provide the basics for applying statistical calculation methods, which promotes an understanding of scientific methodology and laboratory methods.

### 2.3.6 Electives – 6 CP

In the third year of study, electives can be selected from the entire range of courses offered by ETH Zurich and the University of Zurich (\*Attention registration for UZH modules: [www.uzh.ch/de/studies/application/chmobilityin.html](http://www.uzh.ch/de/studies/application/chmobilityin.html)). They provide opportunities for individual continued development and specialised studies to suit students' interests. Subjects related to education studies for the Teaching Certificate (EW1 and EW2) can both be chosen as electives and counted towards the Teaching Certificate (dual allocation).

### 2.3.7 Agricultural Internship – 10 CP

The obligatory agricultural internship provides a connection to agricultural practice in Switzerland and complements the theoretical and methodological principles taught in the course units. The agricultural internship encourages system-oriented thinking and action. During the agricultural internship, students combine the expertise they have acquired during their studies with agricultural practice in Switzerland. The agricultural internship includes preparation for the internship and the ten-week internship itself in the lecture-free period after the 4th semester, as well as post-internship work.

The completion of the agricultural internship is mandatory for the transition to the Master's programme. All the details can be found online at:

[www.usys.ethz.ch/en/studies/agricultural-sciences/bachelor/agrar-praktikum](http://www.usys.ethz.ch/en/studies/agricultural-sciences/bachelor/agrar-praktikum)

### 2.3.8 Bachelor's thesis – 14 CP

The Bachelor's thesis is an independently written academic paper. It is supervised by a lecturer (supervisor) who teaches in the field of agricultural sciences. The thesis represents the culmination of the Bachelor's programme.

Further conditions and registration information are available online at

[www.usys.ethz.ch/en/studies/agricultural-sciences/bachelor/arbeit](http://www.usys.ethz.ch/en/studies/agricultural-sciences/bachelor/arbeit)

## 2.4 Bachelor's programme, divided by semester

First year Fundamentals of Agricultural Sciences		In-depth Agricultural Sciences Category		Agricultural Sciences Basics		Category	
1st semester	2nd semester	3rd semester	4th semester	5th semester	6th semester		
63		63		54		Basic Courses I (First Year) 57 CP	
Mathematics I: Analysis I and Linear Algebra - 6	Mathematics II: Analysis II - 7	Mathematics III: Systems Analysis - 4	Agricultural Production Systems - 2	Agricultural Internship 10	Genetics in Agricultural Sciences - 2	Plant Science - 4	Basic Courses II (Second Year) 27 CP
Chemistry I - 4	Chemistry II - 5	Mathematics IV: Statistics - 4	Sustainable Agroecosystems I - 2		Plant Science - 4	Animal Science - 4	Agricultural Sciences Basics 6 CP
General Biology I - 3	Physics 1 - 5	Physics II - 5	Crop Production - 4		Animal Science - 2	Agricultural Economics - 4	Animal Science 17 CP
Biology III: Essentials of Ecology - 3	General Biology II - 4	Microbiology - 2	Crop Health (including exercises) - 3		Agricultural Economics - 5	Agricultural Economics - 4	Plant Science 19 CP
Principles of Economics - 3	Introduction to Law - 2	Pedosphere - 3	Animal Breeding - 2		Electives - 4	Electives - 2	Agricultural Economics 17 CP
Environmental Systems I - 2	Crops in the World Food System - 2	Plant Nutrition I - 2	Anatomy & Physiology I - 2		Scientific Analysis and Presentation of Data - 2	Excursions - 1	Excursions 3 CP
World Food System - 4	Systematics and Ecology of Algae and Fungi - 2	Ecophysiology - 2	Basic Animal Nutrition - 2		Scientific Methods II: Writing - 3	Bachelor Thesis - 14	Internship 10 CP
Biology I Exercises - 1	Animal Sciences in the World Food System - 2	Introduction to Nutritional Science - 2	Agricultural Policy - 3		Applied Laboratory Techniques in Agricultural Sciences - 3		<b>1st year block exam</b> Chemistry I & II Mathematics I & Mathematics II Biology I & II Biology III Environmental Systems I Systematics and Ecology of Algae and Fungi Animal Sciences in the World Food System Agricultural Economics in the World Food System World Food System Crops in the World Food System Principles of Economics Introduction to the Law
Informatics - 2	Agricultural Economics in the World Food System - 2	Animal Behaviour & Welfare - 1	Excursions - 1		Internship: - "Agrotag"		
Laboratory Course: Elementary Chemical Techniques - 3	Excursions - 1	Introduction to Microeconomics - 3	Scientific Methods I				
		Introduction to Agricultural Management - 2	Internship: Prep				
						<b>Block exam (after 3rd. semester)</b> Physics 1 & 2 Mathematics III Mathematics V Microbiology Pedosphere Introduction to Agricultural Management Introduction to Nutritional Science	

## 2.4.1 List of First-year Courses

Semester	Course Unit	Category/Subject	SWS	CP
<b>HS</b>	<b>FS</b>			
		<b>1st Year Exam Subjects</b>		<b>51</b>
1	551-0001-00	General Biology I	3 V	3
	2 551-0002-00	General Biology II	4 G	4
1	701-0243-01	Biology III: Essentials of Ecology	2 V	3
1	529-2001-02	Chemistry I	2 V + 2 U	4
	2 529-2002-02	Chemistry II	2 V + 2 U	5
1	401-0251-00	Mathematics I: Analysis I and Linear Algebra	4 V + 2 U	6
	2 401-0252-00	Mathematics II: Analysis II	5 V + 2 U	7
1	351-1158-00L	Principles of Economics	2 G	3
	2 851-0708-00L	Introduction to the Law	2 V	2
1	701-0027-00	Environmental Systems I	2 V	2
1	751-0013-00	World Food System	4 V	4
	2 751-0280-00	Crops in the World Food System	2 V	2
	2 751-0282-00	Animal Sciences in the World Food System	2 V	2
	2 751-0014-00	Agricultural Economics in the World Food System	2 V	2
	2 751-0270-00	Systematics and Ecology of Algae and Fungi	2 G	2
		<b>Additional Basic 1st Year Subjects</b>		<b>6</b>
1	751-0801-00	Fundamentals of microscopy and plant biology	2 U	1
1	529-0030-00	Laboratory Course: Elementary Chemical Techniques	6 P	3
1	252-0839-00	Informatics	2 G	2
		<b>Excursions</b>		<b>1</b>
	2 751-0304-00	Excursions in the World Food System	2 P	1
		<b>2nd Year Basics: Exam Block</b>		<b>5</b>
	2 402-0062-00	Physics I	3 V + 1 U	5
		<b>Total</b>		<b>63</b>

## Legend:

HS	fall semester
FS	spring semester
V	lecture
U	exercise
G	lecture and exercises combined
P	internship
SWS	weekly semester hour
CP	credit point

The course lists are available online at:  
[www.usys.ethz.ch/en/studies/agricultural-sciences/documents](http://www.usys.ethz.ch/en/studies/agricultural-sciences/documents)

## 2.4.2 List of Second-year Courses

Semester	Course Unit	Category/Subject	SWS	CP
<b>HS</b>	<b>FS</b>			
		<b>2nd Year Basic Subjects: Exam Block</b>		<b>22</b>
3	752-4001-00	Microbiology	2 V	2
3	701-0071-00	Mathematics III: System Analysis	2 V + 1 U	4
3	401-0624-00	Mathematics IV: Statistics	3 G	4
3	402-0063-00	Physics II (and Physics I, 2nd Semester, 5 CP)	3 V + 1 U	5
3	701-0501-00	Pedosphere	2 V	3
3	752-6003-00	Introduction to Nutritional Science	1.5 V	2
3	751-1311-00	Introduction to Agricultural Management	2 V	2
		<b>Basics of Agricultural Sciences</b>		<b>4</b>
	4 751-8001-00	Agricultural production systems	2 V	2
	4 751-5000-00	Sustainable Agroecosystems I	3 G	2
		<b>Methodology and Internship</b>		<b>10</b>
	4 751-0201-00	Scientific Methods Part I	1 G	0
	4 751-0208-00	Agricultural Internship	P	10
		<b>Excursions</b>		<b>1</b>
	4 751-0300-00	Excursions	2 P	1
		<b>Plant Sciences</b>		<b>11</b>
3	751-3401-00	Plant Nutrition I	2 V	2
3	751-3700-00	Plant Ecophysiology	2 V	2
	4 751-4107-00	Production of Crops and Forage	4 G	4
	4 751-4513-00	Crop Health: Plant Pathology	1 V	1
	4 751-4514-00	Crop Health: Entomology	2 G	2
		<b>Animal Sciences</b>		<b>9</b>
3	751-6101-00	Anatomy and Physiology of Man and Animals I	2 V	2
3	751-7501-00	Animal Behaviour and Welfare	1 V	1
	4 751-6301-00	Animal Breeding	2 V	2
	4 751-6102-00	Anatomy and Physiology of Man and Animals II	2 G	2
	4 751-7002-00	Basics of Animal Nutrition	2 V	2
		<b>Agricultural Economics</b>		<b>6</b>
3	363-1109-00	Introduction to Microeconomics	2 V	3
	4 751-2312-00	Agricultural Policy	2 V	3
		<b>Total</b>		<b>63</b>

## Legend:

HS	fall semester
FS	spring semester
U	exercise
O	mandatory
G	lecture and exercises combined
V	lecture
P	internship
SWS	weekly semester hour
CP	credit point

The course lists are available online at:  
[www.usys.ethz.ch/en/studies/agricultural-sciences/documents](http://www.usys.ethz.ch/en/studies/agricultural-sciences/documents)



### 2.4.3 List of Third-year Courses

Semester	Course Unit	Category/Subject	SWS	CP
<b>HS</b>	<b>FS</b>	<b>Basics of Agricultural Sciences: Mandatory</b>		<b>2</b>
5	751-8003-00	Genetics in Agricultural Sciences	2 G	2
		<b>Methodology (mandatory)</b>		<b>8</b>
5	751-1010-00	Introduction to Scientific Methods Part II: Scientific Writing	4 G	3
5	751-0441-00	Scientific Analysis and Presentation of Data	2 G	2
5	751-0206-00	Applied Laboratory Techniques in Agricultural Sciences	4 P	3
		<b>Excursions (mandatory)</b>		<b>1</b>
6	751-0302-00	Agricultural Excursions II	2 P	1
		<b>Plant Sciences (electives)</b>		<b>8</b>
5	751-4504-00	Plant Pathology I	2 G	2
5	751-5003-00	Sustainable Agricultural Systems II	2 V	2
5	751-4108-00	Innovation in Smart Pharming	2 G	3
5	751-4201-00	Horticulture	2 V	2
6	751-5110-00	Insects in Agroecosystems	2 G	2
6	751-4002-00	Grassland Systems	2 G	2
6	751-4505-00	Plant Pathology II	2 G	2
6	751-3402-00	Plant Nutrition II - Integrated Nutrient Management	2 V	2
6	751-3500-00	Plant Breeding	2 V	2
		<b>Animal Sciences (electives)</b>		<b>6</b>
5	751-7101-00	Applied Animal Nutrition	2 G	2
5	751-7103-00	Animal Feed and Feeding of Ruminant	2 V	2
5	751-6121-00	Regulatory Physiology	2 V	2
6	751-7400-00	Animal Health	2 V	2
6	751-7500-00	Applied Ethology and Animal Welfare	2 V	2
6	751-7800-00	Quality of Products of Animal Origin	3 G	3
		<b>Agricultural Economics (electives)</b>		<b>9</b>
5	363-0537-00	Resource and Environmental Economics	2 G	3
5	751-0903-00	Microeconomics of the Agriculture and Food Sector	2 V	2
5	751-0401-00	Optimization of Agricultural Production Systems	2 G	2
5	752-2120-00	Consumer Behaviour I	2 V	2
6	363-0532-00L	Economics of Sustainable Development	2 V	3
6	363-0532-00L	Land Markets and Land Policy	2 G	2
6	363-0570-00	Principles of Econometrics (recommended for Major in Agricultural Economics)	2 G	3
6	751-1560-00	Production, Investment and Risk Management in Agriculture	2 G	3
6	751-1500-00	Development Economics	2 V	2
6	751-1304-00	Management for Enterprises in the Agri-Food-Chain I	2 V	2
6	751-1101-00	Finance and Accounting (Course does not take place in FS23)	2 G	2
6	751-1552-00	Agrarian Resource and Environmental Economics	2 V	2
6	752-2121-00	Consumer Behaviour II	2 G	2
5	6	<b>Electives (from all ETH/UZH subjects)</b>		<b>6</b>
6	252-0840-02L	Application-Oriented Programming with Python (recommended elective)	2 G	2
		<b>Bachelor Thesis</b>		<b>14</b>
5	6	Bachelor Thesis		14
		<b>Total (a total of 54 credits must be selected from the list)</b>		<b>54</b>

#### Legend:

HS	fall semester
U	exercise
FS	spring semester
G	lecture and exercises combined
V	lecture
P	internship
SWS	weekly semester hour

The course lists are available online at:

[www.usys.ethz.ch/en/studies/agricultural-sciences/documents](http://www.usys.ethz.ch/en/studies/agricultural-sciences/documents)

## 2.5 Bachelor's Degree

After successfully obtaining the required 180 credits, students can apply to the Agricultural Sciences Student Administration Office for the Bachelor's degree.

Holding the ETH Bachelor's degree in Agricultural Sciences guarantees access to the ETH Master's programme in Agricultural Sciences, without additional requirements. Students can enrol for the Master's programme as soon as they require no more than 32 credits to complete the Bachelor's diploma.

A maximum of the following credits may be missing in the following course unit categories:

- Agricultural sciences fields 12 CP
- Bachelor's thesis 14 CP
- Electives 6 CP

In this case, admission is provisional until the Bachelor's degree has been conferred.

**NB:** If the student submits a degree request, without being enrolled in a Master's programme at the ETH, they will be dematriculated. They can start their subsequent Master's programme in Agricultural Sciences in the Autumn or Spring Semester. For details see: [www.ethz.ch/students/en/studies/administrative/uebertritt-bachelor-master.html](http://www.ethz.ch/students/en/studies/administrative/uebertritt-bachelor-master.html)

## 2.6 Performance Assessment

### 2.6.1 Definition and general notes

An assessment must be undertaken for credits to be attained, either taking the form of a content-based examination, active participation (excursion) or the submission of written reports, exercises, etc. Credits will only be awarded if performance is at an adequate level. A distinction is made between session exams, end-of-semester exams and graded or ungraded semester performance.

#### IMPORTANT:

There are the defined forms of performance assessments below. Please check the course catalogue for each learning unit to see which form of performance assessment has been defined and read the e-mails from the examination office. The deadlines for registrations and deregistrations can also be found on myStudies.

**Session exams:**

- written or oral
- graded
- Necessary to register with the Examinations Office via myStudies
- Dates are announced by the Examination Office. Exams are listed in students' personal examination plans in myStudies
- Example: first-year examinations
- NB: several courses for basic subjects can be combined to form examination blocks, e.g. first-year examinations. For an examination block, the average grade for individually weighted examinations must be 4.0, as a minimum.

**End-of-semester exams:**

- written or oral
- graded
- Necessary to register with the Examinations Office via myStudies.
- Dates are announced by lecturers
- Take place during the last two weeks of the semester or the two weeks after the end of the semester.

**Graded or ungraded semester performance:**

- The lecturer will inform students at the start of the course about the type of performance assessment, the material to be assessed, the type of assessment (e.g. active participation in internships and excursions, written work, presentation, duration, language)
- Possibly necessary to register/de-register via the lecturer

More details on the forms of assessment can be found at:

[www.ethz.ch/students/en/studies/performance-assessments/examination-types.html](http://www.ethz.ch/students/en/studies/performance-assessments/examination-types.html)

The type and duration (session and end-of-semester examinations) of the examinations are detailed in the Course Catalogue. At the start of a course, lecturers are obliged to provide students with written information listing the exact content to be assessed, the exact form of the assessment, and permitted aids.

Attainment during performance assessments can either be assessed with grades or with pass/fail. A failed performance assessment can be retaken once. First-year examinations, and other examination blocks containing several course units, must be retaken in full if they are failed.

As soon as an exam, examination block or other performance assessment has been passed, the performance counts towards the attainment of the Bachelor's diploma in the form of credits,

which students can view via myStudies. Students will receive email notification of their graded performance and the credits they have attained (interim certificates). These are referred to if there are any discrepancies.

**2.6.2 Grade weighting for block exams****First-year examination (after the second semester)**

Exam subject	Grade weighting
Chemistry I & Chemistry II	10
Mathematics I & Mathematics II	10
Biology I & Biology II	7
Biology III	3
Environmental Systems I	3
Systematics and Ecology of Algae and Fungi	2
World Food System	4
Crops in the World Food System	2
Animal Sciences in the World Food System	2
Agricultural Economics in the World Food System	2
Principles of Economics	3
Introduction to Law	2

**Exam block (after the third semester)**

Exam subject	Grade weighting
Physics I & Physics II	2
Mathematics III: System Analysis	1
Mathematics IV: Statistics	1
Microbiology	1
Pedosphere	1
Introduction to Agricultural Management	1
Introduction to Nutritional Science	1

### 2.6.3 Options to make up credits in the event of failure to pass assessments

If the course "Information Technology" in the "Other Basic Subjects" category is not passed definitively, i.e. after two attempts, the programme offers a course with comparable content so that the student may make up the required credits.

In addition, the programme offers similar options for making up credits for individual subjects in the category "Agricultural Sciences – Teaching Fields" under the following conditions:

If the required 55 credits can no longer be achieved in the category "Agricultural Sciences – Teaching Fields" due to definitive failure, i.e. failure to pass performance assessments after two attempts, the following options for making up the credits exist:

- If a maximum of three learning units are not passed definitively, the Director of Studies may, upon justified request, decide upon a subject that the student may take to make up the required 55 credits. Any further options for making up credits are excluded.
- If more than three course units are failed definitively, the option to make up credits is excluded. In this case, the programme is deemed to have been definitively failed.

## 3 Master's Programme

### 3.1 Master's Programme and Qualification Profile

Over a period of two years, the Master's programme provides students with in-depth academic knowledge of agriculture, in the field of long-term global food security and the sustainable use of natural resources. The Master's programme is mainly taught in English. To attain the Master's degree, 120 credits need to be acquired. The Master's degree is a professional qualification and offers access to the doctorate.

By choosing a major, students define the focus of their personal education. Students interested in crop production choose the Plant Sciences major. In Animal Sciences, the focus is on the study of livestock. Economic aspects form the main component of the major in Agricultural Economics. A student's educational profile can be shaped by specifically choosing a minor that suits their individual wishes. There are options to choose from within each major and minor. Thanks to this flexibility, graduates are able to access a wide variety of occupational fields.

#### Qualification profile

##### 1. Domain-specific knowledge and understanding

Graduates with a Master's degree in Agricultural Sciences

- possess process and system-oriented knowledge in one of the three specialisations Plant Sciences, Animal Sciences and Agricultural Economics;
- have detailed knowledge of agriculture, agroecosystems and world food systems and the associated ecological, social and cultural dimensions;
- are able to apply their broad basic understanding and specialist knowledge across a wide, networked professional environment.

##### 2. Skills

###### a) Analytical skills

Graduates with a Master's degree in Agricultural Sciences

- are familiar with current subject-specific methods of data collection, analysis and modelling, and know how to approach and apply these and the respective results critically;
- are able to analyse the complex ecological, social, economic and ethical problems of the world food system.

###### b) Development skills

Graduates with a Master's degree in Agricultural Sciences

- are able to deploy appropriate methods to recognise future problems in agricultural systems and develop strategies for their solution;
- are able to reflect critically on established solutions, adapt them and help to implement them;

- are in a position to generate new specialist knowledge and are familiar with various methods of knowledge transfer.

### 3. Personal and social competences

Graduates with a Master's degree in Agricultural Sciences

- possess very good communication, discussion and management skills;
- operate successfully both alone and in a team;
- can operate at various levels to address trans- and interdisciplinary issues;
- are able to take decisions responsibly and to implement them;
- can present complex material clearly to both specialists and generalists and discuss it with them;
- are able to transfer knowledge from a local to a global context and back with an eye to ethical responsibility and an economic approach.

A detailed description of the qualification profile can be found at:

[www.ethz.ch/agrarwissenschaften-qualifikation](http://www.ethz.ch/agrarwissenschaften-qualifikation)

Fact sheets for the majors can be found at:

<https://usys.ethz.ch/studium/agrarwissenschaften/master/vertiefungen>

Further documents and information on the Master's programme can be found at:

<https://www.usys.ethz.ch/studium/agrarwissenschaften/dokumente/master>

#### 3.1.1 Admission

Students can begin the Master's programme in Agricultural Sciences in the Autumn or Spring Semester. Admission is subject to an ETH Bachelor's degree in Agricultural Sciences or a comparable degree recognised by the programme. Details on admission can be found at:

[www.ethz.ch/en/studies/master/application](http://www.ethz.ch/en/studies/master/application)

#### 3.1.2 Excellence Scholarship & Opportunity Programme

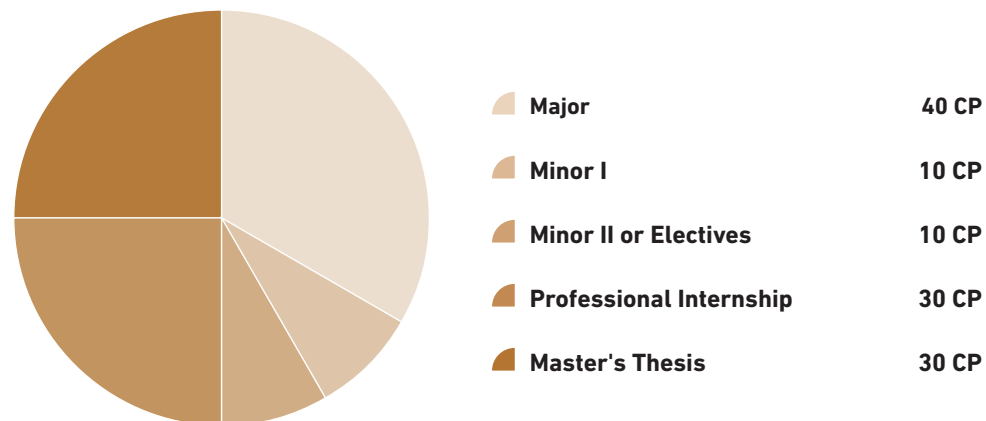
The Excellence Scholarship & Opportunity Programme (ESOP) supports students with a scholarship, mentorship and a network of the ETH Foundation. The scholarship covers the full study and living costs during the Master's degree course.

Further information on the application procedure can be found at

[www.ethz.ch/students/en/studies/financial/scholarships/excellencescholarship.html](http://www.ethz.ch/students/en/studies/financial/scholarships/excellencescholarship.html)

## 3.2 Programme Structure

The Master's programme comprises 120 credits: 40 credits for the major, 2 x 10 CP for the two minors or 1 minor and electives, 30 credits for the professional internship and 30 credits for the six-month Master's thesis. The major consists of a disciplinary competence field and a methodological competence field.



#### 3.2.1 Majors (40 credits)

The Master's programme offers three majors: **Animal Science**, **Plant Science** and **Agricultural Economics**. The major defines the specific subject and is divided into a disciplinary competence field and a methodological competence field. Specialised knowledge is summarised in the **disciplinary competence field (DK)**, the analytical & quantitative education and communication & presentation/technical skills are summarised in the **methodological competence field (MK)**.

A prescribed minimum number of credit points (KP) must be achieved in all areas of competence. These must be supplemented by the choice of further subjects from the specialisation to 40 CP.

**Categories and minimum number of credits to be earned in category**

Category	Sub-category	Minimum number of credits
<b>Animal Sciences</b>		
<b>DK</b>		<b>20</b>
	Livestock Systems	10
	Livestock Biology	7
	Livestock Genetics	3
<b>MK*</b>		<b>10</b>
	Methods for Scientific Research	5
	Project Management in Scientific Research*	5
<b>Plant Sciences</b>		
<b>DK</b>		<b>22</b>
	Agronomy and Breeding	7
	Crop Health	7
	Agriculture and Environment	8
<b>MK*</b>		<b>8</b>
	Seminar in Plant Sciences	2
	Design, Analysis and Communication of Science*	6
<b>Agricultural Economics</b>		
<b>DK</b>		<b>18</b>
	Resource Economics and Agricultural Policy	6
	Decision Making and Management	6
	Development and International Policy	6
<b>MK*</b>		<b>15</b>
	Methods in Agricultural Economics	12
	Project Management and Communication*	3

\*The "Agro-Food Projects" (751-1000-00) organised by the Master's programme plays a central role in the methodological competence field for all three majors and is recommended for all students. Applied issues are dealt with in teams, alongside students of Food Science. This course can be replaced by courses 751-5201-00 "Tropical Cropping Systems" or 701-1502-00 "Trans-disciplinary Case Study". However, only a limited number of places are available for these two courses.

**3.2.2 Minors (1x or 2x 10 credits)**

In the Master's degree programme, students benefit from a wide range of supplementary courses i.e. minors. They can also take electives, which add further specialisation to the Master's studies.

In addition to the majors, the following must be chosen:

- one minor subject and electives worth 10 credits each, or
- two minor subjects worth 10 credits each

**The following 7 minors are available, valid from HS 2022/23:**

**Minor Agricultural Economics and Policy (AEP)**

This minor offers students a deeper insight into the economic principles and drivers in the agricultural sector and the decision making process of involved actors, ranging from farmers, consumer, up- and downstream industries and policy makers, focusing on both the Swiss and the international context. The content of the minor is designed for agricultural students with a major in animal or plant science to complement their study program.

**Minor in Animal Sciences (AnS)**

A broad understanding of the role of livestock is relevant to solve the multitude challenges around the globe. This minor is designed for students majoring in agricultural economics and plant sciences, with interest in systems of farm animals, their genetics, biology, reproduction, nutrition and related ecological issues.

**Minor in Crop- and Grassland Science (CGS)**

Crops and grassland form the foundation of our nutrition. Cultivation and breeding of those plants as well as assessing the interaction of crops and grassland with the environment is crucial to develop sustainable solutions tackling the grand societal challenges that are in the focus of the teaching program in agricultural sciences. This minor is designed for students majoring in agricultural economics or animal science, who want to broaden their knowledge in crop and grassland science.

**Minor Data Science and Technology in Agricultural Sciences (DSTA)**

This minor offers the opportunity to acquire skills and knowledge in collecting, processing and analyzing data, and provides insights into their use in precision farming, robotics and autonomous systems in agriculture. The content of this minor is specifically tailored to students with a background in agricultural sciences, enabling different specialization options based on their prior knowledge.

**Minor Functioning of Soil Systems (FSS)**

Soil is one of the most important resources for agricultural production. Preserving high quality soils in agroecosystems and restoring degraded soils requires a broad understanding of soils and their interaction with agricultural management, society, and the environment. This minor is designed for students of all agricultural science master's programs with a particular interest in soils.

**Minor in Safety and Quality in Agri-Food Chain (AFC)**

The Agri-Food Chain consists of many stakeholders and topic areas, which are relevant for the global food supply chain.. Maintaining high standards of safety and quality is of great importance across all steps of the value chains, from food production to processing. This Minor is designed for students, who are interested in both spectra of the food supply chain, several of the courses are offered for both Agriculture and Food Science.

**Minor Sustainable Agricultural Development (SAD)**

Sustainable development and agriculture concerns the environmental, economic and social aspects of sustainable food systems, analyzing the potential interlinkages of these aspects to ensure food security for present and future generations. This minor is designed for students interested in global and local issues related to sustainable development agricultural and food systems, as well as inter- and transdisciplinary research, in working in diverse teams and applying a wide range of skills and knowledge in research for development.

For details and the course list see:

[www.usys.ethz.ch/en/studies/agricultural-sciences/master/minors-electives](http://www.usys.ethz.ch/en/studies/agricultural-sciences/master/minors-electives)

The previous minors will continue to be offered for the upcoming 22/23 academic year so that students who have started the minors can continue those. For details see: [www.usys.ethz.ch/en/studies/agricultural-sciences/master/minors-electives](http://www.usys.ethz.ch/en/studies/agricultural-sciences/master/minors-electives)

**3.2.3 Electives (10 credits)**

The electives allow students to adapt their educational profile to suit their own interests. Electives may be taken from the entire range of courses offered at ETH Zurich and the University of Zurich (\*Attention registration for UZH modules: [www.uzh.ch/de/studies/application/chmobilityin](http://www.uzh.ch/de/studies/application/chmobilityin)). Instead of electives, another minor can be selected.

**3.2.4 Professional Internship (30 credits)**

The "Professional Internship" is an **obligatory part of the Master's programme in Agricultural Sciences**. During the internship, students carry out a suitable, demanding task in their professional environment, working on a defined task or a (partial) project in the field of agricultural sciences and applying the specialised knowledge they acquired during their studies. In addition, they apply communicative, social, methodological and technical skills that are relevant to the labour market in their everyday work.

In general, the internship is completed during the third semester of the Master's programme, but it must be completed before the start of the Master's thesis. It can only be completed once enrolment in the Master's programme in Agricultural Sciences has been completed and all requirements have been met.

The details are set out in the following regulations:

[Reglement Berufspraktika für die Master-Studiengänge Agrar- und Lebensmittelwissenschaft](#)

**3.2.5 Master's Thesis (30 credits)**

The Master's thesis represents the **culmination of the Master's programme** and is worth 30 credits. It is an academically independent thesis under the supervision of a lecturer from the Agricultural Sciences programme. Professors of D-USYS in Agricultural Sciences, as well as certain lecturers, are authorised to supervise the thesis.

The Master's thesis includes a written paper, an oral presentation and the design and presentation of a poster. The thesis supervisor determines the topic in consultation with the student. It is usually written on the same subject area as the student's major. The time required is approximately six months.

The thesis is graded by the supervisor and a co-supervisor. Students must register their Master's thesis with the Student Administration Office before they begin. The Student Administration Office submits the registered theses (topic, main supervisor and co-supervisor) to the Department Conference for approval in accordance with the 2016 programme regulations.

The following prerequisites must be fulfilled **before the start of the master's thesis**:

- ✓ Completed Bachelor's programme
- ✓ All requirements for admission to the Master's programme must be fulfilled 20
- ✓ At least 60 credits acquired in the Master's programme
- ✓ Internship completed

You can find all the details of the Master's thesis online at:

[www.usys.ethz.ch/en/studies/agricultural-sciences/master/arbeit](http://www.usys.ethz.ch/en/studies/agricultural-sciences/master/arbeit)

### 3.2.6 Master's Degree

A minimum of 120 credits must be acquired before the student may apply for the degree to be conferred. If the requirements are met, the student may apply via the Student Administration Office.

The application must be prepared, printed and signed via myStudies and submitted in person, by post or e-mail to the Student Administration Office. Graduates receive a final statement of grades listing the courses for which the student has selected "Certificate" in their degree application, up to a maximum of 130 credits. The overall average grade is calculated as a weighted average of the individual grades in the certificate. Graduates will receive a degree certificate and a diploma supplement. The diploma supplement describes the courses undertaken during the Master's programme, in English – and in German, as well, for German-language courses.

The Master's degree entitles the holder to use the following title:

#### Master of Science ETH in Agricultural Sciences (abbreviated: MSc ETH Agr.)

The Master's Graduation Ceremony for the Agricultural Sciences Master's programme takes place once a year, usually in March.

### 3.3 Student Exchange

Students may take an exchange semester after they have completed the Bachelor's programme. A maximum of 30 credits can be acquired abroad. In all cases, the exchange programme must be agreed with the departmental exchange coordinator before the start of the departmental exchange semester and must be approved by the Director of Studies. Details can be found at: [www.usys.ethz.ch/studium/agrarwissenschaften/austausch](http://www.usys.ethz.ch/studium/agrarwissenschaften/austausch)

### 3.4 2021/22 Master's programme list of courses

Sem	LE	SWS	CP	Category / Courses	Major			Minor								
					AS	PS	AE	AEP	AnS	CGS	FSS	AFC	SAD	DSTA		
<b>Internship (mandatory)</b>																
HS FS	751-0210-00	P	30	Internship	O	O	O									
<b>Major Animal Science</b>																
Disciplinary Competences <b>Livestock Systems</b> ≥ 10 CP																
HS	751-6501-00	4 G	4	Ruminant Science	D				X							
HS	751-6001-00	1 S	2	Forum: Livestock in the World Food System	D				X							X
HS	751-2105-00	2 G	3	Political Ecology of Food and Agriculture	D											X
FS	751-6602-00	2 G	3	Pig Science	D					X						
FS	701-1604-00	2 G	3	Wildtierökologie und -management	D					X						
FS	751-7512-00	3 G	3	Behaviour and Welfare of Farm Animals	D					X						
FS	751-6802-00	1 G	2	Geflügelwissenschaften	D					X						
Disciplinary Competences <b>Livestock Biology</b> ≥ 7 KP																
HS	751-7310-00	2 V	2	Bioactive Food and Feed Components	D										X	
HS	751-6113-00	2 V	3	Endocrinology and Biology of Reproduction	D											
HS	701-0263-01	2 G	3	Seminar in Evolutionary Ecology of Infectious Diseases	D						X					
FS	751-6122-00	2 G	3	Physiology of Lactation	D					X						
FS	751-7408-00	2 S	3	One Health	D					X						
FS	751-7800-00	3 G	3	Quality of Products of Animal Origin	D										X	
Disciplinary Competences <b>Livestock Genetics</b> ≥ 3 KP																
HS	751-6305-00	3 G	3	Livestock Breeding and Genomics	D											
HS	751-6243-00	2 V	2	Züchtung und Erhaltung tiergenetischer Ressourcen (Sem/B)	D					X						
FS	751-6244-00	3 G	3	Genomic Animal Breeding	D											X
Methodology Competences <b>Methods for Scientific Research</b> ≥ 5 KP																
FS	751-7512-00	3 G	3	Behaviour and Welfare of Farm Animals	M					X						
FS	751-7602-00	2 V	2	Applied Statistical Methods in Animal Sciences	M											X
HS FS	751-6003-00	13 P	6	Training Course in Research Groups (Large)	M											
HS FS	751-6003-01	6 P	3	Training Course in Research Groups (Small)	M											
HS	751-3801-00	2 G	3	Experimental Design & Applied Statistics in Agroecosystem Science	M	M	M									
Methodology Competences <b>Project Management in Scientific Research</b> ≥ 6 KP bzw. ≥ 7 KP bzw. ≥ 9 KP*																
FS	751-1000-00	3 U	4	Praxisprojekte Agro-Food	M	M	M									X
HS	751-5201-10	2 G	5	Tropical Cropping Systems, Soils and Livelihoods (with Exkursion)	M	M	M				X	X				X
FS	701-1502-00	15 P	7	Transdisciplinary Case Study (TRS)	M	M	M									X
HS	751-6001-00	1 S	2	Forum: Livestock in the World Food System	M						X					X

\* mind. 6 KP bei Wahl IPA; mind. 7 KP falls TrCS gewählt wird; mind. 9 KP falls TRS gewählt wird

Sem	LE	SWS	CP	Category / Courses	Major			Minor					
					AS	PS	AE	AEP	AnS	CGS	FSS	AFC	SAD
<b>Major Plant Sciences</b>													
Disciplinary Competences <b>Agronomy and Plant Breeding</b> ≥ 7 KP													
HS	751-4104-00	2 V	2	Alternative Crops	D			X	X				
HS	751-3603-00	2 G	2	Current Challenges in Plant Breeding (B)	D			X					
HS	751-4704-00	2 G	3	Weed Science	D			X					
FS	751-4204-00	2 G	2	Horticultural Science: Case Studies	D			X	X				
FS	751-4106-00	4 G	4	Crop Phenotyping	D			X				X	
FS	751-3606-00	2 G	3	Molecular Plant Breeding	D			X				X	
Disciplinary Competences <b>Crop Health</b> ≥ 7 KP													
HS	751-5121-00	2 V	2	Insect Ecology	D								
HS	751-4811-00	2 G	2	Alien Organisms in Agriculture	D			X					
HS	701-0263-01	2 G	3	Seminar in Evolutionary Ecology of Infectious Diseases	D								
HS	751-4506-00	2 G	2	Pflanzenpathologie III	D			X					
FS	751-5110-00	2 V	2	Insects in Agroecosystems	D			X					
FS	751-4904-00	2 G	2	Microbial Pest Control	D			X					
FS	751-4512-00	2 G	2	Pflanzenpathologie IV: System-Management im modernen Pflanzenschutz	D			X					
FS	751-4902-00	2 V	2	Modern Pesticides – Mode of Action, Residues and Environmental Fate	D			X	X				
Disciplinary Competences <b>Agriculture and Environment</b> ≥ 8 KP													
HS	751-5101-00	2 G	2	Biogeochemistry and Sustainable Management	D			X					
HS	751-3405-00	4 G	4	Chemical Nature of Nutrients and their Availability to Plants: The Case of Phosphorus	D				X				
HS	751-5125-00	2 G	2	Stable Isotope Ecology of Terrestrial Ecosystems (B)	D				X				
FS	751-3404-00	4 G	4	Nutrient Fluxes in Soil-Plant Systems	D			X	X				
FS	751-5102-00	2 G	3	Biogeochemical Modeling of Agroecosystems	D			X				X	
FS	751-5118-00	2 G	2	Global Change Biology	D			X					
FS	751-5127-00	2 G	2	The Microbiome of the Plant-Soil System: Part I	D			X	X			X	
FS	751-5127-01	1 P	1	The Microbiome of the Plant-Soil System: Part II (B)	D				X			X	
FS	701-1342-00	3 G	3	Agriculture and Water Quality	D				X				
Methodology Competences <b>Seminar in Plant Sciences</b> ≥ 2 KP													
HS	751-5115-00	1 S	2	Current Aspects of Nutrient Cycles in Agro-Ecosystems (B)	M			X	X				
HS	751-4003-01	2 S	2	Current Topics in Grassland Sciences (HS)	M			X					
HS	751-2105-00	2 G	3	Political Ecology of Food and Agriculture	M							X	
FS	751-4805-00	2 S	3	Recent Advances in Biocommunication	M								
FS	751-5001-00	2 S	2	Agroecologists without Borders	M							X	
FS	751-4003-02	2 S	2	Current Topics in Grassland Sciences (FS)	M			X					
Methodology Competences <b>Design, Analysis and Communication of Science</b> ≥ 7 KP bzw. ≥ 8 KP bzw. ≥ 10 KP**													
FS	751-1000-00	3 U	4	Praxisprojekte Agro-Food	M	M	M					X	
HS	751-5201-10	2 G	5	Tropical Cropping Systems, Soils and Livelihoods (with Exkursion)	M	M	M		X			X	
FS	701-1502-00	15 P	7	Transdisciplinary Case Study (TRS)	M	M	M					X	
HS	751-3801-00	2 G	3	Experimental Design and Applied Statistics in Agroecosystem Science		O							

\*\*mind. 7 KP bei Wahl IPA; mind. 8 KP falls TrCS gewählt wird; mind. 10 KP falls TRS gewählt wird

Sem	LE	SWS	CP	Category / Courses	Major			Minor					
					AS	PS	AE	AEP	AnS	CGS	FSS	AFC	SAD
<b>Major Agricultural Economics</b>													
Disciplinary Competences <b>Resource Economics and Agricultural Policy</b> 6 KP													
HS	701-1651-00	3 G	6	Environmental Governance				D					
HS	751-2903-00	2 G	3	Evaluation of Agricultural Policies				D	X				
FS	363-0552-00	2 G	3	Economic Growth and Resource Use				D					
FS	701-1653-00	2 G	3	Policy and Economics of Ecosystem Services				D				X	
FS	751-2904-00	2 A	3	Current Topics in Agricultural Economics and Policy				D	X				
Disciplinary Competences <b>Decision Making and Management</b> 6 KP													
HS	751-2205-00	2 G	2	Management für Unternehmen der Agrar- und Ernährungswirtschaft II				D	X				
HS	363-0403-00	2 G	3	Introduction to Marketing				D					
FS	363-0560-00	2 V	3	Financial Management				D					
FS	752-2123-00	2 V	3	Risk Awareness, Risk Acceptance and Trust				D					
FS	752-2121-00	2 G	2	Consumer Behaviour II				D	X				
FS	363-1080-00	2 G	3	Power and Leadership				D					
Disciplinary Competences <b>Development and International Policy</b> 6 KP													
HS	751-2103-00	2 V	2	Socioeconomics in Agriculture				D	X				
HS	860-0023-00	2 V	3	International Environmental Politics				D					
HS	751-2105-00	2 G	3	Political Ecology of Food and Agriculture				D				X	
HS	851-0626-01	2 V	2	International Aid and Development (does not take place in autumn 2022)				D	X			X	
FS	701-1580-00	1 V	3	Environmental and Agricultural Regulation: Law and Governance				D					
FS	751-2102-00	2 V	3	History of Food and Agriculture				D	X				
FS	751-2402-00	2 G	2	Agarhandelsabkommen				D	X				
Methodology Competences <b>Methods in Agricultural Economics</b> 12 KP													
HS	751-0423-00	2 G	3	Risk Analysis and Risk Management in Agriculture				M	X				
HS	751-1573-00	2 V	2	Dynamic Simulation in Agricultural and Regional Economics				M	X				
HS	363-0565-00	2 V	3	Principles of Macroeconomics				M					
HS	363-0305-00	2 G	3	Empirical Methods in Management				M	X				
HS	363-0585-00	2 V	3	Intermediate Econometrics				M					
HS	363-0541-00	3 G	3	Systems Dynamics and Complexity				M					
HS	363-1017-00	2 G	3	Risk and Insurance Economics				M					
HS	401-0647-00	2V+1U	5	Introduction to Mathematical Optimization				M					
FS	701-1252-00	2V+1U	3	Climate Change Uncertainty and Risk: From Probabilistic Forecasts to Economics of Climate Adaptation									
FS	751-1575-00	1 V	3	Applied Optimization in Agricultural Economics				M	X				
FS	363-1000-00	2 V	3	Financial Economics				M					
FS	751-1555-00	2 G	3	Empirical Agricultural Economics				M	X				
Methodology Competences <b>Project Management and Communication</b> ≥ 3 KP													
FS	751-1000-00	3 U	4	Praxisprojekte Agro-Food		M	M	M				X	
HS	751-5201-10	2 G	5	Tropical Cropping Systems, Soils and Livelihoods (with Exkursion)		M	M	M			X	X	



Sem	LE	SWS	CP	Category / Courses	Major			Minor								
					AS	PS	AE	AEP	AnS	CGS	FSS	AFC	SAD	DSTA		
FS	701-1502-00	15 P	7	Transdisciplinary Case Study (TRS)	M	M	M									X
<b>Additional Minor Courses</b>																
HS	752-5111-00	2 V	3	Gene Technology in Foods												X
HS	752-2307-00	2 V	3	Nutritional Aspects of Food Composition and Processing (HS)												X
HS	752-2122-00	2 V	2	Food and Consumer Behaviour												X
FS	752-1202-00	2 G	3	Lebensmittelsicherheit und Qualitätsmanagement												X
FS	752-3024-00	2 G	2	Hygienic Design												X
FS	752-4010-00	1 G	3	Problems and Solutions in Food Microbiology												X
FS	751-5500-00	2 G	2	Simulations and Sensors in Agri-Food Supply Chains											X	X
HS	701-0533-00	2 G	3	Boden- und Wasserchemie								X				
HS	701-0535-00	2 G + 2 U	3	Environmental Soil Physics/Vadose Zone Hydrology								X				
HS	701-1343-00	2 V	3	Soil-Plant Water Relations								X				
FS	701-0524-00	2 V	3	Bodenbiologie								X				
FS	701-0518-00	2 G	3	Bodenressourcen und Global Change								X				
FS	701-1646-00	3 G	5	Carbon and Nutrient Cycling under Global Change								X				
FS	701-0998-00	2 G	3	Environment and Human Health Risk Assessment of Chemicals												X
HS	701-1551-00	2 G	3	Sustainability Assessment (does not take place in autumn 2022)												X
FS	751-0021-01	6 P	4	World Food System Summer School (not offered summer 23)												X
FS	751-1652-00	2 G	2	Food Security - from the Global to the Local Dimension												X
HS	751-5003-00	2 V	2	Sustainable Agroecosystems II												X
FS	851-0654-00	2 G	2	The Sustainable Development Goals in Context												X
HS	701-3001-00	2 G	2	Environmental Systems Data Science: Data Processing												X
HS	701-3003-00	2 G	3	Environmental Systems Data Science: Machine Learning												X
HS	401-6215-00	1 G	2	Using R for Data Analysis and Graphics (Part I)												X
HS	401-6217-00	1 G	2	Using R for Data Analysis and Graphics (Part II)												X
HS	751-5500-00	2 G	3	Introduction to Agricultural Robotics												X
HS	701-0951-00	2 G + 3 P	5	GIST - Einführung in die räumlichen Informationswissenschaften und -technologien												X
HS	651-4031-00	4 G	3	Geographic Information Systems												X
HS	651-2338-00	2 V + 3 U	5	Fernerkundung und Geographische Informationswissenschaft III (Universität Zürich)*												X
HS	FS	UZH-Module		GEO 113; GEO 243, ESS 341: Details auf der Website des Studiengangs *												X

**Legend:**  
 HS: autumn semester  
 FS: spring Semester  
 Sem: semester  
 LE: course unit  
 CP: credit point  
 SWS: weekly semester hour  
 V: lecture  
 G: lecture with exercise  
 U: exercise  
 S: seminar  
 P: internship  
 D: disciplinary competences  
 M: Methodology Competences  
 O: compulsory courses  
 B: block courses

**Majors:**  
 AS: Animal Science  
 AE: Agricultural Economics  
 PS: Plant Science

**Minors:**  
 AEP: Agricultural Economics and Policy  
 AFC: Safety and Quality in Agri-Food Chain  
 DSTA: Data Science and Technology for Agricultural Science  
 CGS: Crop- and Grassland Science  
 FSS: Functioning of Soil Systems  
 SAD: Sustainable Agricultural Development

\* Attention registration for UZH modules: The registration deadlines for mobility at the University of Zurich apply (= last working day before the start of lectures), see [www.uzh.ch/de/studies/application/chmobilityin.html](http://www.uzh.ch/de/studies/application/chmobilityin.html)

## 4 Continuing Education

### 4.1 Teaching Certificate

The ETH Zurich Teaching Certificate in Agricultural Sciences is recognised throughout Switzerland and is accredited by the State Secretariat for Education, Research and Innovation (SERI). SERI's recognition is limited to the following two categories of individuals responsible for vocational education and training:

- **Teachers in secondary professions at colleges/universities**
- **Teachers in secondary professions at vocational schools for vocational training** (Berufskundeunterricht, BKU), provided that proof of professional experience of at least six months is also provided.

The degree is also a good basis for teaching within various organisations, federal offices and companies. The training comprises 24 credits. The certificate is issued only upon successful completion of the Teaching Certificate and the Master's degree in Agricultural Sciences.

Further information can be found online at:

[www.ethz.ch/en/studies/teacher-training](http://www.ethz.ch/en/studies/teacher-training)

### 4.2 Doctorate

Doctoral studies are carried out in a research group and consist of a combination of research activities and studying, as well as, in some cases, a small teaching workload. A doctorate at D-USYS lasts three to four years, on average.

In principle, all university graduates with a university diploma or Master's degree may apply. A student requires a supervisor for their doctoral thesis in order to be admitted. A doctorate at the Institute of Agricultural Sciences provides access to top-level research and qualifies students for an academic career. The prerequisite for admission to a doctorate is a very good Master's degree.

Further information on the process and application procedure for doctoral studies can be found at:

[www.usys.ethz.ch/en/doctorate](http://www.usys.ethz.ch/en/doctorate)

## 5 General information and tips

### 5.1 Websites relevant to the programme

The following sources of information are also recommended for general information on studying at ETH Zurich and for designing study plans:

#### **D-USYS website – Study programme Agricultural Science**

a range of general information on the study programme  
<https://usys.ethz.ch/en/studies/agricultural-sciences>

#### **myStudies**

students use “myStudies” to manage their studies  
[www.mystudies.ethz.ch](http://www.mystudies.ethz.ch)

#### **Academic calendar**

with all the important details about semesters and examinations  
[www.usys.ethz.ch/en/news-events/academic-calendar](http://www.usys.ethz.ch/en/news-events/academic-calendar)

#### **Course Catalogue**

An updated Course Catalogue, with information on content, objectives, performance assessments, etc. relating to all courses offered at ETH Zurich can be accessed via this link.  
[www.vorlesungsverzeichnis.ethz.ch](http://www.vorlesungsverzeichnis.ethz.ch)

#### **mypath**

myPath is a catalogue for extracurricular activities and initiatives at ETH Zurich.  
[www.mypath.ethz.ch](http://www.mypath.ethz.ch)

#### **Administrative**

Here you will find all kinds of information on general administrative matters.  
[www.ethz.ch/students/en/studies/administrative](http://www.ethz.ch/students/en/studies/administrative)

Important addresses connected to infrastructure

#### **Food at the ETH and ETH catering**

[www.ethz.ch/en/campus/getting-to-know](http://www.ethz.ch/en/campus/getting-to-know)

#### **Building and location plans**

[www.plan.ethz.ch](http://www.plan.ethz.ch)

#### **Printing orders and Online printers**

[www.print.ethz.ch](http://www.print.ethz.ch)

#### **Data transfer Polybox**

[www.polybox.ethz.ch](http://www.polybox.ethz.ch)

### 5.2 Correspondence

Correspondence is only sent to personal ETH student email addresses. The Registrar's Office and the Student Administration Office will inform you by email about enrolment and examination registration, as well as about examination results, once available. Lecturers also provide information by email. Lecture documents are usually available for download from a learning platform and are not sent out. These documents can often only be accessed if you have taken the subject in question.

### 5.3 Academic Calendar

Lectures take place during the Autumn Semester (HS: mid-September to end of December) and the Spring Semester (FS: mid-February to end of May/beginning of June).

The **session examinations** take place at the end of the semester break: in the winter session, this is in January and February, and in the summer session, this is in August and September.

**End-of-semester examinations** are scheduled for the end of the semester or the beginning of the lecture-free period. There are special deadlines for all exam registrations. This information can be found on myStudies and is also communicated to all students by Academic Services well in advance.

[www.usys.ethz.ch/en/department/academic-calendar](http://www.usys.ethz.ch/en/department/academic-calendar)

[www.mystudies.ethz.ch](http://www.mystudies.ethz.ch)

#### **Semester enrolment, lecture allocation, exam registration**

All students' administrative tasks are handled via the “myStudies” online application. Semester registration, as well as course choices, should occur as early as possible, and by the end of the

second week of the semester at the latest. Students cannot register for exams before they have chosen subjects. Registration occurs via myStudies for session exams and end-of-semester exams, while there is no specific registration process for semester performance, unless the lecturer requires it (the type of performance assessment is stated in the Course Catalogue).

#### Examinations and examination results, withdrawal from examinations

Type of examination, duration and permitted aids are listed in the course catalogue. The results of session examinations (first-year examination, examination blocks) are only available once the examination session has been completed and the grading conference has been held. This is the case at the end of the semester break in summer and at the beginning of the semester in winter. The examination results are listed in myStudies, in the performance overview. Session exams may be cancelled via myStudies up to one week before the start of the examination session. The Examinations Office must be contacted immediately in the event of later cancellations due to illness, accident, etc.

## 5.4 Financial

Like any form of education, studying at ETH Zurich costs money. In addition to tuition fees and semester fees amounting to CHF 800, most importantly there are living costs to consider too. It is estimated that students spend CHF 16,000 to CHF 26,000 on study and living costs each year. It is primarily the responsibility of students and their families to finance studies. If their funds are insufficient, students may file a scholarship request. [www.ethz.ch/en/studies/financial](http://www.ethz.ch/en/studies/financial)

## 5.5 Military Service

The military accepts requests for deferment of service if military service falls within the exam period or exam preparation period. Requests for deferment of service during the semester are normally approved in the first two academic years, as these are considered assessment years. In subsequent semesters, applications are only approved if exam-relevant material is missed and this would result in an extension of the course of study.

[www.ethz.ch/students/en/studies/administrative/militaerdienst](http://www.ethz.ch/students/en/studies/administrative/militaerdienst)

The application must be submitted at least 14 weeks prior to the start of the military service to the office offering the course (a signature from the Student Administration Office is required). The military requires a period to be specified in which deferred military service can be completed. Military service may not be postponed for more than one year. Further requests for postponement will be subject to re-examination.

## 5.6 Changing to a different degree programme

Students who enter Bachelor's degree studies at ETH Zurich may change degree programmes a maximum of twice before they obtain the Bachelor's degree. If the student failed the first-year examinations or other examinations once or twice in the original degree programme, a change of degree programme is in some cases not possible or is only possible under certain conditions (the option of changing to the Food Science and Environmental Science programmes is excluded because of a comparable first year). For details see: [www.ethz.ch/students/en/studies/administrative/changing-degree-programm](http://www.ethz.ch/students/en/studies/administrative/changing-degree-programm)

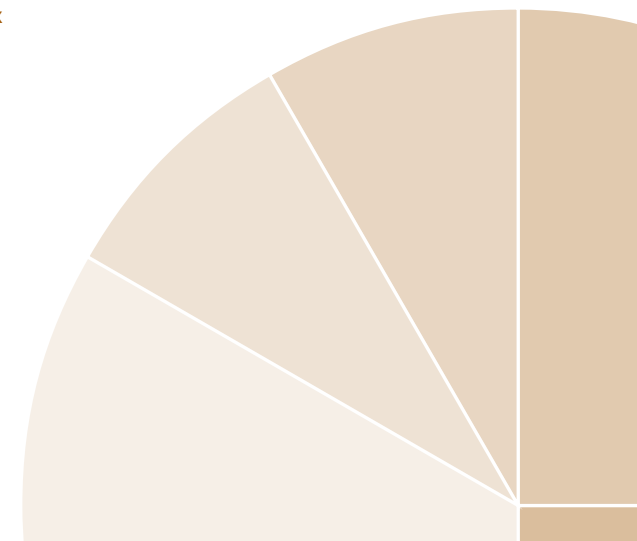
## 5.7 Recognition of study achievements

Students who change from another programme to Agricultural Sciences, or who already have a Bachelor's degree, may have some of their previous credits applied to the Agricultural Sciences programme. First-year subjects may only be credited if the student has received a satisfactory grade and completed the first year. [www.ethz.ch/en/studies/bachelor/application/recognition-study-achievements-from-other-universities](http://www.ethz.ch/en/studies/bachelor/application/recognition-study-achievements-from-other-universities)

## 5.8 Code of Conduct

At ETH Zurich, people of different sexes, from different cultural backgrounds and with diverse tasks undertake research, study and work. This diversity is one of our strengths, and at the same time, it is a challenge. Mutual respect is needed wherever many people meet. The code of conduct (Verhaltenskodex Respekt, PDF, 39 KB) serves as a guideline for how we want to treat each other at our university and it clarifies the values we stand for.

[www.respekt.ethz.ch/verhaltenskodex](http://www.respekt.ethz.ch/verhaltenskodex)



## 6 Important information about D-USYS

The Department of Environmental Systems Sciences (D-USYS) organises teaching and examinations for its Bachelor's and Master's degree programmes, monitors compliance with the regulations and adapts the programmes to align with new developments and findings. D-USYS offers two programmes: Environmental Sciences and Agricultural Sciences (each with a Bachelor's programme and a subsequent Master's programme).

D-USYS is led by the Head of Department. He represents D-USYS externally and chairs the Department Conference. This conference is the department's most important decision-making body and is made up of all the professors in the department, as well as representatives of assistants, students, and technical and administrative staff.

The Department Conference elects Directors of Studies, who are responsible for educational matters.

All questions relating to teaching are handled by the two teaching commissions (Agricultural Sciences and Environmental Sciences). These commissions constantly check the quality of the programmes, ensure that the courses are consistently adapted to new developments, and that they are also places to discuss major and minor difficulties alike relating to daily teaching tasks. Students, assistants and lecturers are represented in the teaching commission.

[www.usys.ethz.ch](http://www.usys.ethz.ch)

## 7 Advice and contacts

General Information on studies at the ETH Zurich:

[www.ethz.ch/students/en.html](http://www.ethz.ch/students/en.html)

Director of Studies

**Director of Studies**

*Approval of deviations from the curriculum and regulations*

Prof. Emmanuel Frossard

Study coordinator

**Study programme coordinator**

*Student counselling, curriculum design, scheduling and requests for postponement of military service*

Emma Lindberg, LFW C13.1, phone 044 632 38 93

E-Mail: [emma.lindberg@usys.ethz.ch](mailto:emma.lindberg@usys.ethz.ch)

Study Services

**Advisor and administration services**

*(Administration of Master's thesis, Master's degree certificates, and performance assessments, Advice on military and civil service deferrals)*

*Organisation of teaching related events, conferences and excursions.*

Maria Rey and Petra Gallaun-Schirgi

LFW C2 and C 13.1, phone 044 632 55 89

E-Mail: [agr-science@ethz.ch](mailto:agr-science@ethz.ch)

*Student counselling and contact person for teaching evaluation*

Petra Gallaun-Schirgi

LFW C 13.1

E-Mail: [petra.gallaun@usys.ethz.ch](mailto:petra.gallaun@usys.ethz.ch)

Doctorate

**Advisor and administration regarding a Doctorate**

Madlaina Gartmann, CHN H 47, phone 044 632 25 23

E-Mail: [phd@usys.ethz.ch](mailto:phd@usys.ethz.ch)

[www.usys.ethz.ch/en/doctorate](http://www.usys.ethz.ch/en/doctorate)

**Internships/Excursions Internship and excursion services***Agricultural and professional internships*

Dr. Brigitte Dorn, LFW C2, phone 044 632 38 87

E-Mail: [praktikantendienstagrw@usys.ethz.ch](mailto:praktikantendienstagrw@usys.ethz.ch)*Excursions*

Dr. Brigitte Dorn / Maria Rey, LFW C2,

E-Mail: [exkursionenwfs@usys.ethz.ch](mailto:exkursionenwfs@usys.ethz.ch)**Exchange****Exchange studies***Advice for student exchange (incoming and outgoing)*

Emma Lindberg, LFW C13.1, phone 044 632 38 93

E-Mail: [emma.lindberg@usys.ethz.ch](mailto:emma.lindberg@usys.ethz.ch)**Student Exchange Office ETH Zurich**

ETH Zurich, Campus Center, HG F 23.1, phone 044 632 61 61

E-Mail: [exchange@ethz.ch](mailto:exchange@ethz.ch)[www.ethz.ch/en/the-eth-zurich/organisation/departments/academic-services/student-exchange-office](http://www.ethz.ch/en/the-eth-zurich/organisation/departments/academic-services/student-exchange-office)**Academic Services****Registrar's Office ETH Zurich**

ETH Zurich, Campus Center, HG F 19, phone 044 632 30 00

E-Mail: [registrar@ethz.ch](mailto:registrar@ethz.ch)**Examinations Office ETH Zurich**

ETH Zurich, Campus Center, HG F 18.1, phone 044 632 20 68

E-Mail: [exams@ethz.ch](mailto:exams@ethz.ch)**Student Services****Student Advisory Service and Coaching**

Rebecca Ridolfi, Campus Center, HG F 69.1, phone 044 632 73 24

E-Mail: [rebecca.ridolfi@sts.ethz.ch](mailto:rebecca.ridolfi@sts.ethz.ch)[www.ethz.ch/students/en/advice/student-advisory-service-coaching](http://www.ethz.ch/students/en/advice/student-advisory-service-coaching)**Psychological Counseling Services University/ETH Zurich**ETH Zurich, Campus Center, Plattenstrasse 28, 8032 Zurich  
phone 044 634 22 80,E-Mail: [pbs@sib.uzh.ch](mailto:pbs@sib.uzh.ch)[www.pbs.uzh.ch/en](http://www.pbs.uzh.ch/en)**Financial Aid Office ETH Zurich**

ETH Zurich, Campus Center, HG F 22.1, phone 044 632 20 40/20 88

E-Mail: [studienfinanzierung@sts.ethz.ch](mailto:studienfinanzierung@sts.ethz.ch)[www.ethz.ch/students/en/studies/financial/scholarships](http://www.ethz.ch/students/en/studies/financial/scholarships)**Disability Advisory Service**Karin Züst Santschi, ETH Zurich, Campus Center, HG F 68.3,  
phone 044 632 35 92E-Mail: [karin.zuest@sts.ethz.ch](mailto:karin.zuest@sts.ethz.ch)[www.ethz.ch/students/en/advice/disability-advisory-service](http://www.ethz.ch/students/en/advice/disability-advisory-service)**IT Support****Agricultural Sciences IT Support Group**

HEST Department IT Service Group (ISG D-HEST)

LFV E31, phone 044 632 65 00

E-Mail: [helpdesk@hest.ethz.ch](mailto:helpdesk@hest.ethz.ch)**Association of students****VSETH***VSETH, the Association of Students at ETH represents all students at ETH. It organises a wide range of facilities and assistance for studying at ETH Zurich.*[www.vseth.ethz.ch](http://www.vseth.ethz.ch)

Association of students **VIAL**

*VIAL is the professional association of Agricultural Sciences (D-USYS) and Food Sciences (D-HEST) students. It is a branch of the VSETH Association of Students at ETH.*

[www.vial-ethz.ch](http://www.vial-ethz.ch)

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Sport Association

**Academic Sport Association Zurich (ASVZ)**

*The ASVZ offers all university members an attractive and varied sports program, which offers plenty of opportunities to discover new activities but also includes old favorites. The ASVZ is all about people, the joy of exercise, fitness, work/study-life balance and improving the quality of life.*

[www.asvz.ch/en/634-welcome-asvz](http://www.asvz.ch/en/634-welcome-asvz)

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Help-line from  
students for  
students

**Night Line**

*Nightline Zurich is an independent help-line from students for students of ETH, UZH and other academic institutions in Zurich.*

*All requests are handled confidentially and anonymously.*

Tel.: 044 633 7777

E-Mail: [info@nightline.ch](mailto:info@nightline.ch)

[www.nightline.ch](http://www.nightline.ch)

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