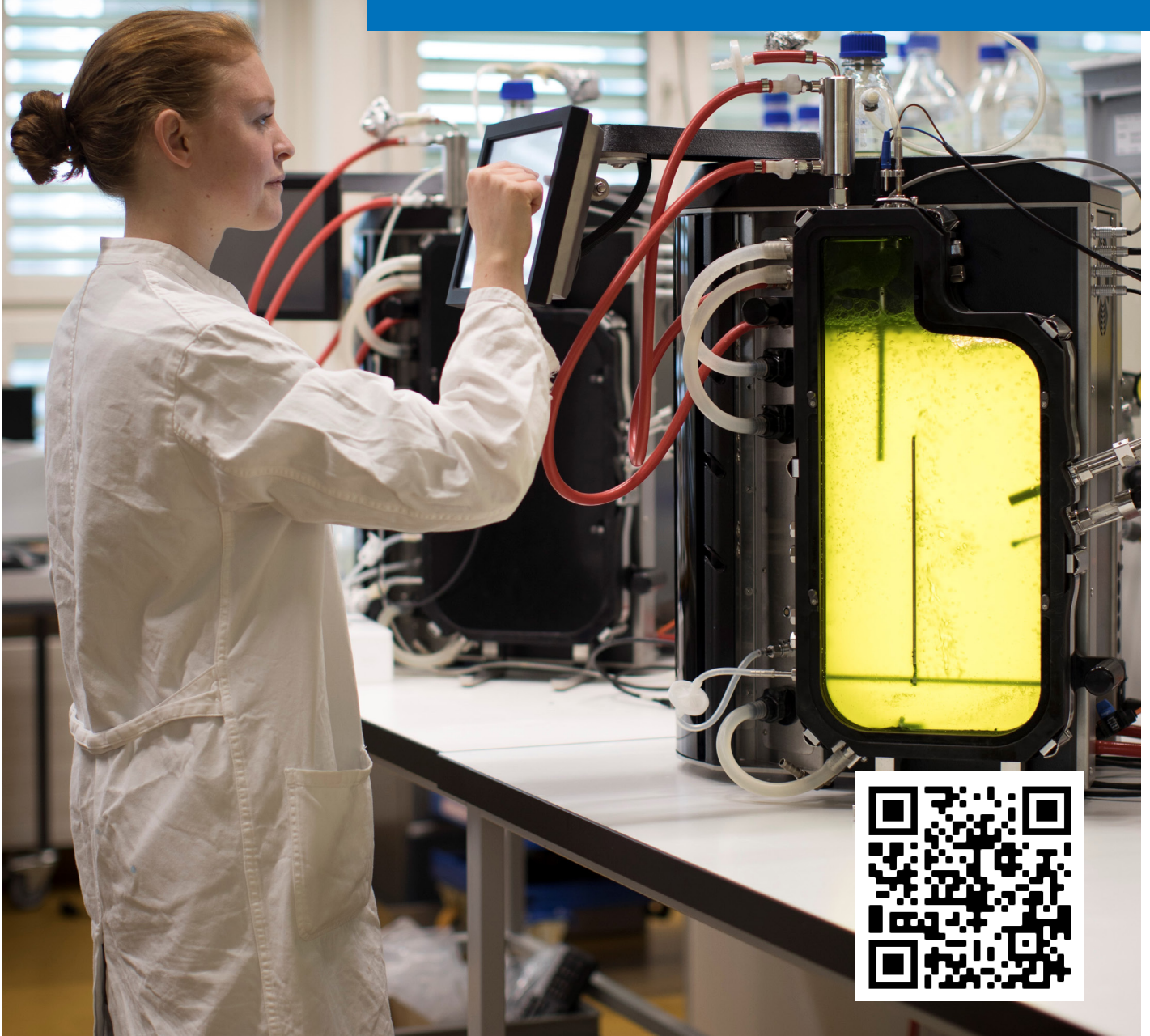


Study Guide 2023/24

Food Science

Bachelor and Master

February 2024



Welcome to the "Food Science" Degree Programme

You have decided to pursue Food Science at ETH Zurich. What awaits you is an interesting and exciting study programme, which comprises basics in natural science and in engineering as well as laboratory practice and which will lead to the Bachelor/Master degree certification.

Your education in the ETH degree programme will prepare you for addressing local and global problems regarding the technology and the characterisation of food systems at the highest international level of quality.

Your studies will empower you to make a significant contribution to furnishing humanity with healthy and high-quality foods in your future professional career.

I wish you success along your path, and hope that it brings enjoyment in the development of your practical skills and creativity.

Your Director of Studies

A handwritten signature in blue ink, appearing to read 'M. Siegrist', written in a cursive style.

Prof. Dr. Michael Siegrist

The study programmes are regulated by the following legally binding documents:

Bachelor's study programme in Food Science:

- Programme Regulation 2016 (edition 06.03.2019 - 2)

Master's study programme Food Science:

- Programme Regulation 2017 (edition 01.11.2016 – 0)

The study guide explains the study programme regulations and gives an overview of the courses. Details on courses and performance assessments are published in the course catalogue.

The study regulations can be found at www.rechtssammlung.ethz.ch. All regulations are available in German only.

Imprint

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1 Information and Support

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2 Food Science at ETH Zurich

2.1 Why choose Food Science?

Food science deals with the development and production of food systems as well as the relationships between molecular and macroscopic product structure and their associated properties. It aims at optimising food products in order to fulfil consumer needs. The transformation of raw materials and their mixtures into industry products through controlled physical or biochemical mechanisms is influenced by the composition of raw materials as well as the technical processes of food production.

The goal of food science is to provide a global guarantee for the nutrition of humanity. This should be reached with secured, high-value and healthy food products from sustainable use of natural resources. Additionally, the specific needs of particular individuals and groups should be addressed, including aspects of health, nutrition, performance, and development, taking into consideration industry needs in emerging and developing markets. Knowledge of food science builds the basis for these activities.

Food science stands at the centre of a global discussion on the nourishment, health, and well-being of humans as a natural need.

2.2 Reasons for Choosing the Study Programme Food Science

Food Science at ETH Zurich is chosen by those who

- are interested in **vital questions** such as worldwide food security, safety and quality, questions of development, design and coordination of human living spaces and cultural landscapes.
- want to acquire the theoretical background to **work in a practical environment** at the interface of natural science and economics.
- want good **job opportunities** once the degree is obtained.

Some arguments to support your decision:

- excursions and practice at an early stage provide an insight into the implementation of science.

- a degree of ETH Zurich stands for quality.

2.3 Educational Objective

The study programme in Food Science is hosted and organised by the Department Health Sciences and Technology (D-HEST).

The curriculum has been established according to the rules of the Bologna Declaration of 1999. The study programme is structured in levels (Table 1). The first level comprises the Bachelor's programme and provides a basic education in natural, social, engineering and food sciences leading to the Bachelor's degree. It qualifies to continue and pursue the Master's programme, which imparts expertise in a particular topic and leads to the **Master's degree** and **professional qualification**. Doctoral studies are the third level leading to a scientific qualification.

Table 1: Structure of the curricula

Level	Degree programme	Duration (approx.)	Degree	Qualification
1	Bachelor programme	3 years	Bachelor of Science ETH	none
2	Master programme	1.5 years	Master of Science ETH	Professional qualification
3	Doctoral Studies	3 years	Dr. sc. ETH Zürich	Scientific qualification

2.4 Job Profile

The professional opportunities are wide-ranging and offer many possibilities for personal development. Most graduates work in the fields of production, research and development, or quality control. Other areas include employment as scientific assistants, in management, consulting, sales/purchase, or marketing (Figure 1).

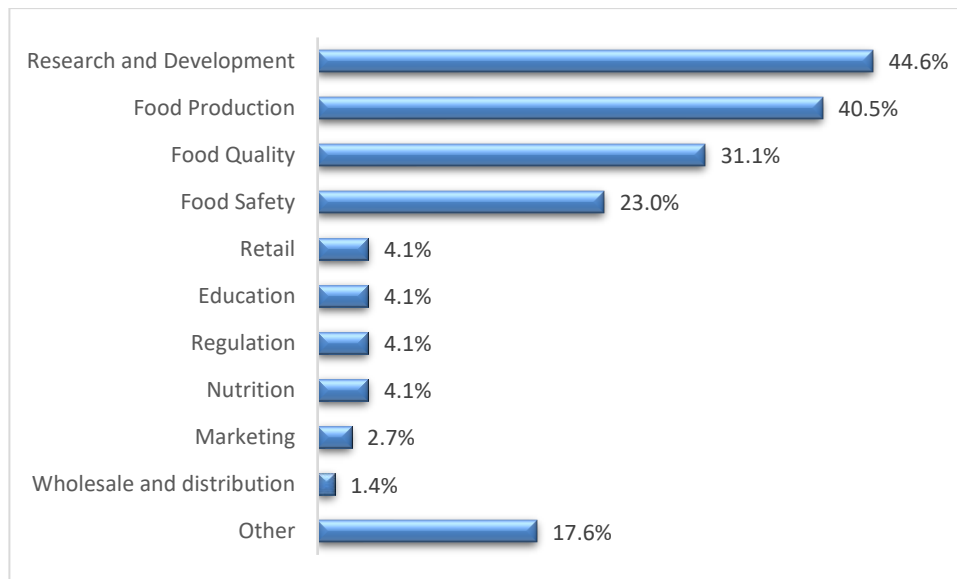


Figure 1: Data from 74 ETH Food Science graduates from 2013 to 2018, survey 2019.

The professional association SVIAL (www.svial.ch) outlines the profile of its members as follows:

Food Science alumni from ETH Zurich are qualified to:

- add their share in shaping the future of humanity and the planet earth.
- identify sustainable ways to feed the ever-increasing world population without compromising the fundamentals of life, i.e. soil, water, air.
- adapt food and processing techniques to market demands for high quality products.
- occupy key positions in research, education, teaching, consultation, management, industry, administration and in assisting developing countries.

Food Science alumni from ETH Zurich consider themselves generalists with the skills to:

- interconnect specialists at a scientific level
- create networks of extensive **interdisciplinary** systems and issues, to establish synthesis, to understand the consequences and to communicate with all parties involved and to have a holistic view
- specialise in different fields, through practice or further education
- realise their potential to work in promising positions not only in Switzerland but worldwide

3 Studying at ETH Zurich

General information on studies and study activities can be found on the web sites of ETH Zurich or the Department of Health Sciences and Technology:

→ www.ethz.ch/en/studies

→ www.hest.ethz.ch/en/studies/food-science

Registered students can find information about administrative matters with important links here:

→ www.ethz.ch/students/en/studies/administrative

3.1 Bologna Model

ETH study programmes are based on the two-level Bologna model: the three-year Bachelor level is followed by a one and a half to two years Master level. In the Bologna model the students' achievements are awarded with credit points (CP) according to the European Credit Transfer System (ECTS). A study effort of approximately 30 hours is awarded with one CP according to ECTS. Normally 30 CP should be obtained during one semester.

3.2 Study Plan, Study Time Limit

The normal period of study for the Bachelor programme is 3 years (180 CP). The first year is concluded with the first-year examination. It must be taken after the second or third semester at the latest and may be repeated once if failed. Including possible repetition, the examination must be passed within two years. This is followed by the second year of study with an examination session at the end of each semester. In the third year each course is assessed separately. The maximum admissible time limit for the whole Bachelor programme is 5 years.

The normal period of study for the Master programme is 1.5 years (90 CP): two semesters for taking courses and one semester for the Master thesis. The maximum admissible time limit is 3 years.

3.3 Academic Calendar

The lectures take place during the autumn semester (HS; mid-September to end of December, calendar weeks 38-51) and the spring semester (FS; mid-February to end of May/beginning of June, calendar weeks 08-22, with a break of one week at Easter). Individual block sessions may take place between semesters. The session examinations take place at the end of the semester break in the winter session (WS; January/February, calendar weeks 04-07) and the summer session (SS; August/September, calendar weeks 32-35). End-of-semester examinations (SEP) are scheduled at the end of the semester and at the beginning of the semester break. Special time slots are given for all examination registrations. Information about examinations is provided on myStudies. Additionally, all students are informed by Academic Services in due time.

→ www.mystudies.ethz.ch

→ www.ethz.ch/students/en/news/academic-calendar

3.4 Performance Assessments (Examinations)

Performance assessments are based on the credit system of the Bologna declaration. To receive credit points a performance assessment is required which can have various forms (oral or written examinations; written reports and theses; presentations, active participation in courses/excursions).

IMPORTANT

The defined forms of performance assessment are described below. Please check the course catalogue for each course unit to see which form of performance assessment has been defined, and read all e-mails from the Examinations Office. The deadlines for registration of and deregistration from examinations are published in myStudies.

There are the following defined forms of performance assessments:

3.4.1 Session examinations

Session examinations take place in the summer session (August) and in the winter session (January/February). Session examinations can be single examinations or

block examinations consisting of several examinations. In case of block examinations, all examinations must be taken in the same session and the grade average of the individually weighted examinations is required to be at least 4.0. Details of performance assessments for each course unit are shown in the course catalogue. The dates of the examinations are planned and published by the Examination Office. As soon as the dates are set, students will be informed by the Examination Office by e-mail. Session examinations must be registered in myStudies on time.

3.4.2 End-of-semester examinations

The time frame for end-of-semester examinations includes the last two weeks of the semester and the first two weeks of the semester break following the semester (calendar weeks 2 and 3 of the new calendar year at the turn of the year). The type of performance assessment (procedure, duration, language) is published in the course catalogue for each course unit. The dates of the examinations are entered in the system by the lecturers and are visible in myStudies (please contact the lecturer directly in case the date is not published in myStudies). End-of-semester examinations must be registered in myStudies on time. This applies to repetition examinations as well.

3.4.3 Semester performance

Examinations defined as “semester performance” (graded or ungraded) take place during the semester, at the end of the semester or during the semester break. The type of performance assessment (examination material, procedure, duration, language) and the date of the examination are communicated by the lecturer at the beginning of the course. *NO REGISTRATION or CANCELLATION* is possible in myStudies, and usually no details about the examinations are published in the course catalogue. The registration and cancellation details are given by the lecturer, if applicable. A student who is not attending the examination must inform the lecturer directly. This applies to repetition examinations as well.

3.4.4 Continuous Performance Assessment

Continuous Performance Assessments can only be applied in courses, which are assessed, by session examinations or end-of-semester examinations.

Continuous Performance Assessments are assessments within the course unit that take place during the semester. They are part of the performance assessment, whereby the final exam in the examination session or at the end of the semester continues to form the main part of the performance assessment.

Continuous Performance Assessments are detailed in the course catalogue in the field “Additional information on the examination mode”.

A distinction must be made between

- Compulsory Continuous Performance Assessment → compulsory, deregistration mandatory
- Interim examination → taking is recommended, but not mandatory
- Learning tasks → participation recommended, but not mandatory

Further information about Continuous Performance Assessments is available on the student portal at <https://ethz.ch/students/en/studies/performance-assessments.html>.

3.4.5 Repetition of Examinations

A failed performance assessment can be retaken **once** (single or block examinations). Non-attendance at a registered examination is considered a fail and decreed as a “no show”. **All results of performance assessments** (passed, failed, no show) are shown in the final academic record.

If an examination block or first year examination is failed, the whole block must be retaken. A second fail of the compulsory examination block results in exclusion from the study programme.

3.4.6 Overview of the examinations

An overview of the examinations is given on the following pages 10-11. This summary serves as a guide. Detailed and binding information on performance assessment is published on the student portal:

→ <https://ethz.ch/students/en/studies/performance-assessments.html>

Detailed information on performance assessments:

→ <https://ethz.ch/students/en/studies/performance-assessments.html>

The type of performance assessment is specified in the course catalogue for each course unit:

→ www.courses.ethz.ch

Table 2: Overview of the examination types and schedule

Examination Type*	Examination period	De-/Registration ***	Organisation of examination	Examination date
Session examinations**	Winter session CW 4 – 7 Summer session CW 32 – 35	Mandatory in myStudies	Examinations office (Academic services)	Dates are published in myStudies
<i>Repetition of Session examinations</i>	Depending on the binding information in the course catalogue in the next session, or after a new course enrolment after one year	Mandatory in myStudies	Examinations office (Academic services)	Dates are published in myStudies
End-of-semester examinations**	The last two weeks of a semester and the first two weeks of the semester break: CW 50 – 51/2 – 3 CW 21 – 24	Mandatory in myStudies	Lecturers	The date is published in myStudies
<i>Repetition of end-of-semester examinations</i>	CW 8 – 9 CW 38 – 39	Mandatory in myStudies	Lecturers	The date is published in myStudies
Semester performance (graded or ungraded)	During the semester, at the end-of-semester or during the semester break	Registration usually not required; if requested by lecturers, registration is done directly with the lecturer. NO registration in myStudies.	Lecturers	The date is announced by the lecturer, will NOT be published in myStudies

4 Bachelor's Programme in Food Science

4.1 Qualification Profile

The objective of the three-year Bachelor education is to provide students with a broad basic knowledge in food science that is built on the fundamental disciplines of biology, chemistry, mathematics, and economics.

The Bachelor's degree in Food Science is interdisciplinary and imparts a broadly based and well-networked knowledge in all relevant food science areas. The training enables the graduates to think system oriented and to work efficiently and solution-oriented. The Bachelor's degree primarily prepares for the Master's degree in Food Science.

Subject-specific knowledge and understanding

Graduates with a Bachelor's degree in Food Science

- have basic knowledge of biology, chemistry, mathematics and physics as well as economics and law;
- have a solid basic knowledge of food chemistry and analysis, food process engineering, food technology, food microbiology, food biotechnology and Human nutrition;
- have in-depth knowledge in some of the above-mentioned disciplines of food science;
- understand their subject area as part of natural and human-shaped systems and recognize the scope of the associated ecological, social, economic and ethical issues.

Skills

Graduates with a Bachelor's degree in Food Science

- work on food science issues independently and present results in accordance with scientific standards;
- use laboratory techniques to deal with issues in selected disciplines;
- bring disciplinary knowledge into interdisciplinary issues;
- develop solutions for the sustainable production of safe and high quality food.

Personal and social skills

Graduates with a Bachelor's degree in Food Science

- expand their knowledge independently and let it flow into their work;
- critically reflect on available scientific information sources and extract the essentials,
- work constructively at various interfaces with experts from neighbouring areas and contribute their knowledge and experience.

4.2 Structure of the Bachelor curriculum

The study load is measured in Credit Points (CP) (cf. 3.1). Bachelor studies encompass subjects of natural, engineering, social and food sciences with a total of 180 CP (Table 3).

During the first year, the curricula of Food Science and Agricultural Sciences are coordinated for the better part. In addition, certain courses are offered together with earth sciences and environmental sciences. In the course of the study programme, the focus on the subject of the study programme increases.

Table 3: Breakdown of the various fields of teaching within the Bachelor curriculum

Subject	Courses	Credit Points	
Natural and Engineering Sciences	Biology	30	84
	Chemistry	16	
	Mathematics	21	
	Physics	12	
	Computer Science	2	
	Environmental Systems	2	
	Excursions	1	
Social Sciences	Economics, Legislation, Management	10	10
Food Science	World Food System	4	71
	Food Science	62	
	Excursions	2	
	Electives	3	
Bachelor's Thesis		15	15

4.2.1 Description of the Disciplinary Categories

The categorisation of lectures shows how the performance assessments are organised. A minimum number of CP has to be acquired in each category. The overview is shown in Table 4.

Basic Courses I (55 CP)

Basic Courses I comprise the basic courses of the first-year examination, plus supplementary courses of the first year of study. The basic courses are mandatory and consist of mathematics, natural science, and social science topics. The supplementary courses are mandatory as well and include lab practices, exercises, and informatics. The supplementary courses are not part of the first-year examination.

Basic Courses II (42 CP)

Basic Courses II comprise courses in mathematics, natural sciences, and social sciences. They are completed in the second year. Courses are mandatory, with credit points awarded based on block examinations at the end of each semester.

Basics of Food Science (19 CP)

The Basics of Food Science build a solid foundation in all disciplines of food science and hence provide important basic knowledge for further advanced lectures.

Food Science: General courses (32 CP)

These courses impart more specific knowledge of food science from all disciplines. The selection of courses should be optimised with a focus on the prospective major in the master's programme.

Food Science Laboratory Practice (11 CP)

The Food Science Laboratory Practices complement the studies with practical knowledge in laboratory work and in working with experimental facilities. The lab courses are mainly carried out in groups, and the performance assessment requires active participation as well as reporting.

Excursions (3 CP)

Excursions related to the “World Food System” take place during the first year of study. Excursions in the 2nd and 3rd year are orientated towards food and agricultural topics. Information about the field trips can be found in the course catalogue or on the following web page:

→ www.hest.ethz.ch/en/studies/food-science/bachelor-programme-food-science/bachelor-regulation-2016/excursions

Electives (3 CP)

All courses on the list of elective courses published on the website of the Department of Health Sciences and Technology, and which can be selected in myStudies or the course catalogue in this category, may be chosen as elective courses. Elective courses can only be selected from the second year of study.

4.2.2 Bachelor's Thesis

The Bachelor's thesis is a scientific and independent work. It concludes the Bachelor's studies. It encompasses 15 CP, and the duration is 450 hours. The thesis can be carried out part time or full time. In case of important reasons and upon request, the Director of Studies can extend the duration of the thesis work.

A professor or a lecturer of the department D-HEST or the department D-USYS, Agricultural Sciences, is responsible for the topic and the supervision of the thesis. Topics can be given out at the start of the 5th semester.

The Bachelor's thesis has to be registered in advance with the Study Secretariat who will submit it for approval to the Department Conference according to the Regulations of the Bachelor's study programme.

For the **registration of the thesis** the registration form has to be filled out, signed and handed in at the Study Secretariat as PDF by e-mail. Students register for the thesis in myStudies three months before starting at the earliest and one month after starting at the latest. The study secretariat confirms the registration after approval by the Department Conference.

The submitted thesis is graded by the responsible lecturer and a co-supervisor.

Details about the Bachelor's thesis as well as information on topics and the registration form can be found at:

www.hest.ethz.ch/en/studies/food-science/bachelor-programme-fod-science/bachelor-regulation-2016/bachelor-thesis

Table 4: Structure of the Bachelor's programme with details of the compilation of credit points in the 2nd and 3rd year of study. For each year, the minimal number of credit points that must be covered is listed as well as the maximum that can be selected.

Category	Total 180 CP	Number of CPs available	Year 1 56 CP	Year 2 54-64 CP	Year 3 57-67 CP
Basic Courses I - First Year Examinations 49 CP - First Year Additional Studies 6 CP	55	55	55		
Excursions	3	3	1	1	1
Basic Courses II - Examination Block I (HS) - Examination Block II (FS) - Other Performance Assess- ments (HS)	42	42	5*	22 16 4	
Electives	3	ca. 44		1-3	1-3
Basics of Food Science	19	22		9-13	6-10
Food Science: General Courses	32	53			32
Food Science Laboratory Practice	11	17		0-3	8-11
Bachelor's Thesis	15				15

* Basic Courses II are assessed in the 2nd year.

4.2.3 Courses

Year 1

The following tables contain all courses offered in the first year and each semester of education and show an overview of the mark weightings of individual subjects in the first-year examinations.

1st semester (autumn semester)

Subjects for the first year examinations (49 CP; all subjects are compulsory)

Category: Basic courses I (total 55 CP during the 1st year of study)

Course unit	Subject	SWS	CP	Grade weighting
551-0001-00	Allgemeine Biologie I	3V	3	7*
701-0243-01	Biologie III: Ökologie	2V	3	3
529-2001-02	Chemie I	2V + 2U	4	12*
701-0027-00	Umweltsysteme I	2V	2	2
401-0251-00	Mathematik I: Analysis I und Lineare Algebra	4V + 2U	6	12*
351-1158-00	Ökonomie	2G	3	3
751-0013-00	Welternährungssystem (World Food System)	4V	4	4

* assessed as year-courses in the first year examinations

First year additional studies (6 CP; all subjects mandatory)

Category: Basic courses I (total 55 CP during the 1st year)

Course unit	Subject	SWS	CP
751-0801-00	Grundlagen der Mikroskopie und Pflanzenbiologie	1V + 2G	1
252-0839-00	Einsatz von Informatikmitteln	2G	2
529-0030-00	Praktikum Chemie (in January, during semester break)	6P	3

The performance assessments take place during respectively after the first semester.

Legend

V, G, U	Lecture, lecture combined with exercise, exercise
P	Practical
S	Workshop
SWS	hour per week and semester (1 SWS is equal to 14 lectures with 45 min each)
CP	Credit point (equal to approx. 30 working hours)

2nd semester (spring semester)**Subjects for the first year examinations (49 CP; all subjects are compulsory)**Category: Basic courses I (total 55 CP during the 1st year of study)

Course unit	Subject	SWS	CP	Grade weighting
551-0002-00	Allgemeine Biologie II	4G	4	7*
529-2002-02	Chemie II	2V + 2U	5	12*
851-0708-00	Grundzüge des Rechts	2V	2	2
401-0252-00	Mathematik II: Analysis II	5V + 2U	7	12*
751-0270-00	Ökologie und Systematik von Algen und Pilzen	2G	2	2
751-0280-00	Kulturpflanzen im World Food System	2V	2	2
751-0282-00	Nutztierwissenschaften im World Food System	2V	2	2

* assessed as year courses in the first year examinations.

Field trips (mandatory)In this category a total of 3 CP are acquired during the 1st, 2nd and 3rd year of study.

Course unit	Subject	SWS	CP
752-0019-00	Exkursionen im World Food System	2P	1

Subjects for examination block 1 (22 CP; all subjects compulsory)Category: Basic courses II (a total of 42 CP in the 1st and 2nd year of study)

Course unit	Subject	SWS	CP
402-0062-00	Physik I**	3V + 1U	5

** will be assessed together with Physik II after the 3rd semester.**Summary:**

During the first year, the following CP will be acquired:

Basic courses I	
• Subjects for the first year examinations	49 CP
• First year additional studies	6 CP
Excursions	1 CP (of 3 CP)
Basic courses II	
• Examination block 1*	5 CP

* will be assessed after the 3rd semester; the completion of the basic courses II, 42 CP in total, takes place in the 2nd year.

Year 2

The following tables contain all courses offered in the second year and each semester of education and show an overview of the grade weightings of individual subjects in the two examination blocks.

3rd semester (autumn semester)

Subjects for examination block 1 (22 CP; all subjects compulsory)

Category: Basic courses II (total 42 CP during the 1st and 2nd year of study)

Course unit	Subject	SWS	CP	Grade weighting
752-0100-00	Biochemie	2V	2	1
701-0071-00	Mathematik III: Systemanalyse	2V + 1U	4	2
752-4001-00	Mikrobiologie	2V	2	1
701-0225-00	Organic Chemistry	2V	2	1
402-0063-00	Physik II **	3V + 1U	5	3
752-6305-00	Physiology and Anatomy I	2V	2	1

** assessed together with Physik I in the 2nd semester.

Subjects for examination block 2 (16 CP; all subject compulsory)

Category: Basic courses II (total 42 CP during the 1st and 2nd year of study)

Course unit	Subject	SWS	CP	Grade weighting
752-0180-00	Grundlagen in Lebensmittelwissenschaften	2V	3	1
401-0624-00	Mathematik IV: Statistik	2V + 1U	4	2

Examination block 2 is assessed after the 4th semester.

Other performance assessments (4 CP; all subjects compulsory)

Category: Basic courses II (total 42 C during the 1st and 2nd year of study)

Course unit	Subject	SWS	CP
752-4003-00	Praktikum Mikrobiologie	3P	2
402-0000-02	Praktikum Physik für Studierende in Lebensmittelwissenschaften	4P	2

Basics of Food Science

In this category, a total of min.19 CP must be earned. To do this, 6 out of 7 subjects must be taken and passed.

Course unit	Subject	SWS	CP
752-1000-00	Lebensmittelchemie I	2V	3

From the 3rd semester:

Electives

In this category, a min. of 3 CP must be earned during the 2nd and 3rd years of study.

Course unit	Subject	SWS	CP
	according to the list of electives		

All subjects from the food science general courses category can be credited as electives.

4th semester (spring semester)**Subjects for examination block 2 (16 CP; all subjects compulsory)**Category: Basic courses II (total 42 CP during the 1st and 2nd year of study)

Course unit	Subject	SWS	CP	Grade
701-0206-00	Ausgewählte Kapitel der Physikalischen Chemie	2G	2	1
551-1420-00	Molecular Biology	2G	2	1
752-6306-00	Physiology and Anatomy II	2V	3	1
751-0014-00	Agrarökonomie im World Food System	2V	2	1

Excursions (mandatory)In this category a total of 3 CP are acquired during the 1st, 2nd and 3rd year of study.

Course unit	Subject	SWS	CP
752-0020-00	Exkursionen I	2P	1

Basics of Food ScienceIn this category, a min. of 19 CP must be acquired during the 2nd and 3rd year of study. For this, 6 of the 7 subjects available for selection must be completed and passed.

Course unit	Subject	SWS	CP
752-2001-00	Lebensmittel-Technologie	3G	3
752-1101-00	Lebensmittelanalytik I	2V	3
752-3000-00	Lebensmittel-Verfahrenstechnik I	3V	4

Food science laboratory practiceIn this category, 11 CP are acquired during the 2nd and 3rd year of study. See note on p. 21.

Course unit	Subject	SWS	CP
752-1004-00	Lebensmittelchemie-Praktikum	4P	3

Summary:During the 2nd year of study the following CP are acquired:

Basic courses II	
• Examination block 1	22 CP
• Examination block 2	16 CP
Other performance assessments	4 CP
Excursions	1 CP (of 3 CP)
Electives	1 to 3 CP (of 3 CP)
Basics of Food Science	10 to 13 CP (of 19 CP)
Food Science Laboratory Practice	0 to 3 CP (of 11 CP)

Year 3

The following tables contain all courses offered in the third year.

5th semester (autumn semester)**Basics of Food Science**

In this category, a min. of 19 CP are acquired during the 2nd and 3rd years of study. For this, 6 of the 7 subjects available for selection must be completed and passed.

Course unit	Subject	SWS	CP
752-5001-00	Food Biotechnology	2V	3
752-5001-01	Food Biotechnology (<i>only for students studying under the study regulations 2016 who did not attend Verfahrenstechnik I</i>)	2V	4
752-6001-00	Introduction to Nutritional Science	2V	3
752-4005-00	Lebensmittel-Mikrobiologie I	2V	3

Food Science General Courses

In this category, a min. of 32 CP are acquired during the 3rd year of study.

Course unit	Subject	SWS	CP
752-2120-00	Consumer Behaviour I	2V	2
752-2000-00	Food Materials Science	3G	4
551-0317-00	Immunology I	2V	3
752-1103-00	Lebensmittelanalytik II	2V	3
752-1003-00	Lebensmittelchemie II	2V	3
752-3001-00	Lebensmittel-Verfahrenstechnik II	3G	3
752-6307-00	Food, Habits and Health	2V	3
752-0300-00	Wissenschaftliches Arbeiten in den Lebensmittelwissenschaften	2V	3
363-0711-00	Accounting for Managers (Replacement for 751-11-01-00 Finanz- und Rechnungswesen which is not offered in FS 2024)	2V	3

Food science laboratory practice

In this category, 11 CP are acquired during the 2nd and 3rd year of study.

Course unit	Subject	SWS	CP
752-4007-00	Experimentelle Lebensmittel-Mikrobiologie	4P	3
752-2002-00	Lebensmittel-Technologiepraktikum	4P	2

Note: In order to be able to acquire the required 11 CP, at least 4 of 6 offered food science laboratory practice courses must be completed. The free choice is restricted due to the limited number of places. The allocation is made according to separate information.

From 5th semester: Bachelor's thesis

Course unit	Subject	SWS	CP
752-0220-20	Bachelor-Arbeit		15

6th semester (spring semester)

Food Science: General Courses

In this category, a minimum of 32 CP are acquired during the 3rd year of study.

Course unit	Subject	SWS	CP
752-6002-00	Advanced Topics in Nutritional Science	2V	3
752-2121-00	Consumer Behaviour II	2G	2
752-5003-00	Food and Beverage Fermentation (replacement for "Fermented Milk Products" and "Fermented Plant and Meat Products")	4G	5
751-1101-00	Finanz- und Rechnungswesen (not offered in FS 2024; replacement see 5th semester, HS 2023)	2G	2
551-0318-00	Immunology II	2V	3
752-1300-00	Introduction to Toxicology	2V	3
752-4006-00	Lebensmittel-Mikrobiologie II	2V	3
752-2101-00	Lebensmittel-Sensorik	2G	2
752-3002-00	Lebensmittel-Verfahrenstechnik III	3G	3

Food science laboratory practice

In this category, 11 CP are acquired during the 2nd and 3rd year of study. See details on p. 21.

Course unit	Subject	SWS	CP
752-5004-00	Lebensmittel-Biotechnologiepraktikum	5P	3
752-3004-00	Lebensmittel-Verfahrenstechnikpraktikum	5P	3
752-6210-00	Laborpraktikum Toxikologie und Ernährung	4P	3

Excursions (mandatory)

In this category overall 3 CP are acquired during the 1st, 2nd and 3rd year of study.

Course unit	Subject	SWS	CP
752-0021-00	Exkursionen II	2P	1

Summary:

In the 3rd year of study the following CP are acquired:

Excursions	1 CP (of 3 CP)
Electives	1 to 3 CP (of 3 CP)
Basics of Food Science	6 to 9 CP (of 19 CP)
Food Science: General Courses	32 CP
Food science laboratory practice	8 to 11 CP (of 11 CP)
Bachelor's thesis	15 CP

4.2.4 Bachelor Degree Certificate

After obtaining the necessary 180 CP, the student applies for the Bachelor's degree with the title **Bachelor of Science ETH in Food Science** (BSc ETH Lm). The request for the diploma certificate is filed in myStudies, signed and submitted as PDF by e-mail to the study secretariat.

For the Bachelor's degree, max. 190 CP are allowed. This means that it is possible to acquire min. 180 to max. 190 CP.

With the Bachelor's degree, students can continue studies in the Master's degree programme in Food Science at ETH Zurich. Students who take a semester's or year's break are advised to apply for the Bachelor's certificate after the break and to enrol a leave of absence from their Bachelor studies (observe deadlines!).

→ www.ethz.ch/students/en/studies/administrative/study-specific/uebertritt-bachelor-master

5 Master's Programme in Food Science

The degree Master of Science ETH Food Science allows graduates to enter the professional world or to pursue further education as part of a doctorate.

5.1 Start and Admission

Admission requires a Bachelor's degree from ETH in Food Science. Holders of comparable degrees from other institutions need to apply for admission. Students with a Bachelor's degree from ETH in Food Science who enter directly into the Master's degree programme may start the Master's degree programme in the spring or in the autumn semester. All other students can start the Master's degree programme in the autumn semester only.

→ www.ethz.ch/en/studies/registration-application/master/application

5.2 Qualification Profile

In the Master's programme in Food Sciences, students acquire knowledge on relevant research topics and are able to analyse the many different components of the world food system and develop tailor-made solutions. Graduates are qualified for key positions in industry, research, education, consulting and public authorities. They have a high level of theoretical and methodological skills as well as social competence for entering a demanding professional or academic career.

The choice of majors and minors offered in this study programme allow students to individually position themselves with a distinct focus on specific fields of Food Science. The study programme offers majors in **Food Processing, Food Quality and Safety, Nutrition and Health**, and **Human Health, Nutrition and Environment**.

As a result, scientists with a Master's degree in Food Science are qualified for key positions in industry, in research, education and training, consulting, and administration. Because the Master's programme in Food Science encompasses a wide spectrum in the area of food and nutrition, it also offers a solid base for employment in the public sector.

General Knowledge and Skills

Master's degree holders in Food Science:

- have expert knowledge in one of the four majors: Food Processing, Food Quality and Safety, Nutrition and Health, and Human Health, Nutrition and Environment;
- have a system-oriented, interdisciplinary perspective;
- have the ability to use their broad basic understanding and specialist knowledge in their work as required;
- establish relationships between physical, chemical and biological processes and their effects on products and society - from an individual, local and global perspective.

Domain-specific Skills and Competences

a) *Skills in Analysis*

Graduates with a Master's degree in food science are able to

- Carry out, interpret and critically question subject-specific data surveys and statistical analyses independently;
- analyse and work on complex food science issues.

b) *Skills in Development*

Graduates with a master's degree in food science are able to

- develop safe processes of food production and evaluate their effects on consumption and health;
- use technologies as required, develop them further and generate new specialist knowledge from them;
- work on complex interdisciplinary projects and issues;
- develop solutions independently, evaluate them critically and optimise them;
- become familiar with the latest developments in their field and assess them critically.

Personal and social skills

Graduates with a Master's degree in Food Science

- are able to take on responsibility in a team, to reflect on their own knowledge and skills as well as team processes and to use them constructively in project teams;
- discuss and work on complex issues both with specialists and with lay people;
- are able to reflect on the ecological, economic, social and cultural contexts of nutrition and to act responsibly;
- deal intensively with relevant topics in food sciences and take technically grounded decision.

5.3 Curriculum Structure

The main teaching language in the Master's programme is English. Some courses are offered in German. All details on the courses can be found in the course catalogue. The Master's programme encompasses 90 Credit Points (CP): 40 CP are reserved for the major, 2 x 10 CP for the 2 minors, or for one minor (10 CP) plus electives (10 CP) respectively, as well as 30 CP for the Master's thesis. The major is made up of 20 CP for the disciplinary part, 10 CP for the methodology part and 10 CP for the optional part (Table 5).

Internships are voluntary and an optional part of the Master's programme.

Table 5: Overview of the Master's degree programme

Master's degree programme			90 CP
Structure	Major	disciplinary subjects: 20 CP	40 CP
		methodology subjects: 10 CP	
		optional subjects: 10 CP	
	Minor I		10 CP
	Minor II or electives		10 CP
	Master's Thesis		30 CP

5.3.1 Majors in the Master's study programme

The chosen major defines the special expertise of a Master's student. Four majors are offered: **Food Processing, Food Quality and Safety, Nutrition and Health, and Human Health, Nutrition, and Environment.**

All majors consist of the following types of courses:

- disciplinary subjects, which build fundamental knowledge within the major fields.
- methodology subjects, which train methods and tools.
- optional subjects, which refine the students' educational profile.

The major Human Health, Nutrition and Environment has special rules and arrangements. (cf. p. 22 Major Human Health, Nutrition and Environment).

The subjects of each individual major are shown in the following tables.

Major Food Processing

Engineering is a key part in this major. It aims at entering the industry field of processing or equipment technology in the food production sector.

Disciplinary Subjects

In this category 20 CP are acquired.

Subjects in the autumn semester:

Course unit	Subject	CP	Hours
752-3021-00	Food Process Design and Optimization (not offered anymore)	4	2G
752-3103-00	Food Rheology	3	2V
752-2314-00	Physics of Food Colloids	3	2V
752-3023-00	Process Measurements and Automation (not offered anymore)	3	2G
752-2003-00	Selected Topics in Food Technology	3	2V
752-3201-00	Emerging Thermal and Non Thermal Food Processing	3	2V
227-0697-00	<i>Credited upon request as a substitute for lectures no longer offered:</i> Industrial Process Control	4	3G

Subjects in the spring semester:

Course unit	Subject	CP	Hours
752-5102-00	Functional Microorganisms in Foods and the Human Microbiome	4	2V
752-2402-00	Food Packaging	2	2G
752-3200-00	Sustainable Food Processing	3	2V
752-3022-00	Planung von Lebensmittelbetrieben	3	2G

Methodology Subjects

In this category 10 CP are acquired.

Subjects in the autumn semester:

Course unit	Subject	CP	Hours
401-0625-01	Applied Analysis of Variance and Experimental Design	5	2V+1U
401-0649-00	Applied Statistical Regression	5	2V+1U

Subjects in the spring semester:

Course unit	Subject	CP	Hours
751-1000-00	Praxisprojekte Agro-Food (formerly named «Interdisziplinäre Projektarbeit»)	4	3U
752-2110-00	Multivariate Statistical Analysis	3	2V
752-2310-00	Physical Characterization of Food	3	2V

Optional Subjects

In this category 10 CP are acquired.

Subjects in the autumn semester:

Course unit	Subject	CP	Hours
752-3105-00	Physiology Guided Food Structure and Process Design	3	2V

Subjects in the spring semester:

Course unit	Subject	CP	Hours
752-3104-00	Selected Topics in Food Rheology	3	2G
752-1300-01	Food Toxicology	3	1V
752-3024-00	Hygienic Design	2	2G
752-1202-00	Food Safety and Quality Management	3	2G
752-2123-00	Risk Awareness, Risk Acceptance and Trust	3	2V
751-5500-00	Simulations and Sensors in Agri-Food Supply Chain	3	2G

Major Food Quality and Safety

This major aims predominantly at entering the industry field of product development, food production, and quality control.

Disciplinary Subjects

In this category 20 CP are acquired.

Subjects in the autumn semester:

Course unit	Subject	CP	Hours
752-1021-00	Food Enzymology	3	2G
752-5103-00	Functional Microorganisms in Foods (not offered anymore)	3	2G
752-0801-00	Lebensmittelrecht	1	1V
752-4009-00	Molecular Biology of Foodborne Pathogens	3	2V
752-1301-00	Special Topics in Toxicology	2	2G

Subjects in the spring semester:

Course unit	Subject	CP	Hours
752-5102-00	Functional Microorganisms in Foods and the Human Microbiome	4	2V
752-1300-01	Food Toxicology	3	1V
752-1202-00	Food Safety and Quality Management	3	2G
752-4010-00	Problems and Solutions in Food Microbiology	3	1G
752-1022-00	Selected Topics in Food Chemistry	3	2G

Methodology Subjects

In this category 10 CP are acquired

Subjects in the autumn semester:

Course unit	Subject	CP	Hours
401-0625-01	Applied Analysis of Variance and Experimental Design	5	2V+1U
401-0649-00	Applied Statistical Regression	5	2V+1U
752-5500-00	Applied Bioinformatics: Microbiomes	5	2V+2U

Subjects in the spring semester:

Course unit	Subject	CP	Hours
751-1000-00	Praxisprojekte Agro-Food (formerly named «Interdisziplinäre Projektarbeit»)	4	3U
752-2110-00	Multivariate Statistical Analysis	3	2V
752-2310-00	Physical Characterization of Food	3	2V

Optional Subjects

In this category 10 CP are acquired.

Subjects in the autumn semester:

Course unit	Subject	CP	Hours
752-1302-00	Advanced Topics in Toxicology	2	2G
752-5111-00	Gene Technology in Foods (not offered anymore)	3	2V
376-1353-00	Nanostructured Materials Safety	2	1V

Subjects in the spring semester:

Course unit	Subject	CP	Hours
752-1030-00	Food Biochemistry Laboratory	3	5P
752-3024-00	Hygienic Design	2	2G
752-2123-00	Risk Awareness, Risk Acceptance and Trust	3	2V
752-2102-00	Selected Topics in Food Sensory Science	3	2V
752-6450-00	Food, Microbiota and Immunity: Debating the Evidence	3	2G

Major Nutrition and Health

This major conforms to the profile requested by industry for product development and advising on human nutrition.

Disciplinary Subjects

In this category 20 CP are acquired.

Subjects in the autumn semester:

Course unit	Subject	CP	Hours
752-6101-00	Dietary Etiologies of Chronic Disease	3	2V
752-6105-00	Epidemiology and Prevention	3	2V
752-2307-00	Nutritional Aspects of Food Composition and Processing	3	2V

Subjects in the spring semester:

Course unit	Subject	CP	Hours
752-6402-00	Nutrigenomics	3	2V
752-1300-01	Food Toxicology	3	1V
752-6202-00	Nutrition Case Studies	3	2G
752-6104-00	Nutrition for Health and Development	2	2V
752-6303-00	Neurobiology of Eating and Drinking	3	2G
752-6102-00	The Role of Food and Nutrition for Disease Prevention	3	2V

Methodology Subjects

In this category 10 CP are acquired.

Subjects in the autumn semester:

Course unit	Subject	CP	Hours
401-0625-01	Applied Analysis of Variance and Experimental Design	5	2V+1U
401-0649-00	Applied Statistical Regression	5	2V+1U
752-4400-00	Applied Bioinformatics: Microbiomes	5	2V+2U

Subjects in the spring semester:

Course unit	Subject	CP	Hours
752-2110-00	Multivariate Statistical Analysis	3	2V
752-6201-00	Research Methodology in Nutrition	3	2V

Optional Subjects

In this category 10 CP are acquired.

Subjects in the autumn semester:

Course unit	Subject	CP	Hours
752-5103-00	Functional Microorganisms in Foods (not offered anymore)	3	2G
752-5111-00	Gene Technology in Foods (not offered anymore)	3	2V
752-6403-00	Nutrition and Performance	2	2V
752-6301-00	Nutrition-Related Physiology	3	2V
766-6205-00	Nutrient Analysis in Foods	3	3U
752-1301-00	Special Topics in Toxicology	2	2G
752-2122-00	Food and Consumer Behaviour	2	2V
766-6304-00	New: Introduction to the Nutrition Research Process	3	2G

Subjects in the spring semester:

Course unit	Subject	CP	Hours
752-2102-00	Selected Topics in Food Sensory Science	3	2V
752-6450-00	Food, Microbiota and Immunity: Debating the Evidence	3	2G
752-5102-00	Functional Microorganisms in Foods and the Human Microbiome	4	2V

Major Human Health, Nutrition and Environment

This major focuses on the effect of nutrition, infectious diseases, and pollutants on human health. The study programme enables employment in the areas of nutrition, public health and the environment. It is offered in conjunction with the study programmes Environmental Sciences and Health Sciences and Technology.

As this major is linked to the study programme Environmental Sciences, the structure differs from the three other majors offered in the Master's programme Food Science. This major has four different modules to choose from. The module "Public Health" is compulsory. Two additional modules are selected in each of which at least 10 CP must be achieved. In total, at least 30 CP must be achieved in the three modules. In addition, a compulsory Term Paper as a methodology subject encompassing 6 CP must be written. The remaining 4 CPs in methodology subjects to obtain a total of 10 CPs can be chosen from the list presented below.

Module Public Health (compulsory)

In this module 10 CP must be acquired.

Subjects in the autumn semester:

Course unit	Subject	CP	Hours
401-0629-00	Applied Biostatistics	4	3G
752-6105-00	Epidemiology and Prevention	3	2V
752-6151-00	Public Health Concepts*	3	2V

* Core lecture of the major

Subjects in the spring semester:

Course unit	Subject	CP	Hours
363-1066-00	Designing Effective Projects for Promoting Health@Work	2	2G
752-6104-00	Nutrition for Health and Development	2	2V

From the following three modules, **two modules** must be selected, in each of which a minimum of 10 CP must be earned:

Module Infectious Diseases (Option)

When selected as one of the two modules to be chosen, min. 10 CP must be acquired.

Subjects in the autumn semester:

Course unit	Subject	CP	Hours
701-1703-00	Evolutionary Medicine for Infectious Diseases	3	2G
701-1471-00	Ecological Parasitology	3	1V+1P
551-0223-00	Immunology III	4	2V
752-4009-00	Molecular Biology of Foodborne Pathogens	3	2V
701-0263-01	Seminar in Evolutionary Ecology of Infectious Diseases	3	2G

Subjects in the spring semester:

Course unit	Subject	CP	Hours
701-1708-00	Infectious Disease Dynamics	4	2V
751-7408-00	One Health	3	2G

Module Nutrition and Health (Option)

When selected as one of the two modules to be chosen, min. 10 CP must be acquired.

Subjects in the autumn semester:

Course unit	Subject	CP	Hours
752-6101-00	Dietary Etiologies of Chronic Disease	3	2V
752-2122-00	Food and Consumer Behaviour	2	2V
752-5103-00	Functional Microorganisms in Foods (not offered anymore)	3	2G
766-6304-00	New: Introduction to the Nutrition Research Process	3	2G

Subjects in the spring semester:

Course unit	Subject	CP	Hours
752-1300-01	Food Toxicology	3	1V
752-6303-00	Neurobiology of Eating and Drinking	3	2G
752-6402-00	Nutrigenomics	3	2G
752-6102-00	The Role of Food and Nutrition for Disease Prevention	3	2V
752-5102-00	Functional Microorganisms in Foods and the Human Microbiome	4	2V

Module Environment and Health (Option)

When selected as one of the two modules to be chosen, min. 10 CP must be acquired.

Subjects in the autumn semester:

Course unit	Subject	CP	Hours
376-1353-00	Nanostructured Materials Safety	2	1V

Subjects in the spring semester:

Course unit	Subject	CP	Hours
701-1312-00	Advanced Ecotoxicology	3	2V
701-1350-00	Case Studies in Environment and Health	4	2V
701-0662-00	Environmental Exposures (Air Pollution and Noise) and Health Effects	3	2V
701-1704-01	Health Impact Assessment: Concepts and Case Studies	3	2V

Term Paper (compulsory, methodology subject)

Only in the autumn semester:

Course unit	Subject	CP	Hours
701-1701-00	Human Health, Nutrition and Environment: Term Paper	6	13A

Optional methodology subjects

In this category 4 CP are acquired.

Only in the spring semester:

Course unit	Subject	CP	Hours
752-2110-00	Multivariate Statistical Analysis	3	2V
752-2310-00	Physical Characterization of Food	3	2V
752-6201-00	Research Methodology in Nutrition	3	2V

5.3.2 Minors

Minors consist of advanced courses outside of the chosen specialisation. Two minors can be chosen, or one minor plus electives (see 5.3.3). In each of the chosen minors or electives, min. 10 CP are required. Only the subjects listed below in each minor can be credited in the respective minors. You can choose from the following minors:

Food Biotechnology

Sem	Course unit	Subject	CP	Hours
HS	752-5105-00	Biotechnology of Alcoholic Beverage Production	2	2V
HS	752-5103-00	Functional Microorganisms in Foods (not offered anymore)	3	2G
HS	752-5111-00	Gene Technology in Foods (not offered anymore)	3	2V
HS	752-5500-00	Applied Bioinformatics: Microbiomes	5	2V+2U
FS	752-5102-00	Functional Microorganisms in Foods and the Human Microbiome	4	2V
FS	751-7800-00	Quality of Products of Animal Origin	3	3G

Food Chemistry

Sem	Course unit	Subject	CP	Hours
HS	752-1021-00	Food Enzymology	3	2G
HS	529-0041-00	Moderne Massenspektroskopie, gekoppelte Analysenmethoden, Chemometrie	6	3G
FS	752-2310-00	Physical Characterization of Food	3	2V
FS	752-1022-00	Selected Topics in Food Chemistry	3	2G

Food Microbiology

Sem	Course unit	Subject	CP	Hours
HS	752-5103-00	Functional Microorganisms in Foods (not offered anymore)	3	2G
HS	752-4009-00	Molecular Biology of Foodborne Pathogens	3	2V
FS	752-3024-00	Hygienic Design	2	2G
FS	752-1202-00	Food Safety and Quality Management	3	2G
FS	752-4010-00	Problems and Solutions in Food Microbiology	3	1G
FS	752-5102-00	Functional Microorganisms in Foods and the Human Microbiome	4	2V

Food Processing and Materials Science

Sem	Course unit	Subject	CP	Hours
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HS	752-2314-00	Physics of Food Colloids	3	2V
FS	752-3024-00	Hygienic Design	2	2G
FS	752-3022-00	Planung von Lebensmittelbetrieben	3	2G
FS	752-2310-00	Physical Characterization of Food	3	2V
FS	752-3104-00	Selected Topics in Food Rheology	3	2G
FS	751-5500-00	Simulations and Sensors in Agri-Food Supply chain	3	2G

Food Sensory Science and Consumer Behaviour

Sem	Course unit	Subject	CP	Hours
HS	752-2122-00	Food and Consumer Behaviour	2	2V
FS	752-2110-00	Multivariate Statistical Analysis	3	2V
FS	752-6303-00	Neurobiology of Eating and Drinking	3	2G
FS	752-2123-00	Risk Awareness, Risk Acceptance and Trust	3	2V
FS	752-2102-00	Selected Topics in Food Sensory Science	3	2V

Food Toxicology

Sem	Course unit	Subject	CP	Hours
HS	752-1302-00	Advanced Topics in Toxicology	2	2G
HS	752-6105-00	Epidemiology and Prevention	3	2V
HS	752-4009-00	Molecular Biology of Foodborne Pathogens	3	2V
HS	376-1353-00	Nanostructured Materials Safety	2	1V
HS	752-1301-00	Special Topics in Toxicology	2	2G
FS	701-1312-00	Advanced Ecotoxicology	3	2V
FS	701-0998-00	Environmental and Human Health Risk Assessment of Chemicals (block course)	3	32h
FS	752-1300-01	Food Toxicology	3	1V
FS	752-2123-00	Risk Awareness, Risk Acceptance and Trust	3	2V

Public Health Nutrition

Sem	Course unit	Subject	CP	Hours
HS	752-6101-00	Dietary Etiologies of Chronic Disease	3	2V
HS	752-6105-00	Epidemiology and Prevention	3	2V
FS	752-6202-00	Nutrition Case Studies	3	2G
FS	752-6104-00	Nutrition for Health and Development	2	2V
FS	752-6201-00	Research Methodology in Nutrition	3	2V
FS	752-6102-00	The Role of Food and Nutrition for Disease Prevention	3	2V

Safety and Quality in Agri-Food Chain

Sem	Course unit	Subject	CP	Hours
HS	752-2122-00	Food and Consumer Behaviour	2	2V
HS	751-6001-00	Forum: Livestock in the World Food System	2	1S
HS	752-5111-00	Gene Technology in Foods (not offered anymore)	3	2V
HS	752-2307-00	Nutritional Aspects of Food Composition and Processing	3	2V
HS	751-7310-00	Bioactive Food and Feed Components	2	2V
FS	751-0021-01	World Food System Summer School (FS)	4	6P
FS	751-1555-00	Empirical Agricultural Economics	3	2G
FS	751-4902-00	Modern Pesticides - Mode of Action, Residues and Environmental Fate	2	2V
FS	751-4204-01	Horticultural Science: Case Studies	2	2G
FS	752-3024-00	Hygienic Design	2	2G
FS	751-1000-00	Praxisprojekte Agro-Food (formerly named «Interdisziplinäre Projektarbeit»)	4	4U
FS	752-1202-00	Food Safety and Quality Management	3	2G
FS	752-4010-00	Problems and Solutions in Food Microbiology	3	1G
FS	751-7800-00	Quality of Products of Animal Origin	3	3G
FS	751-3606-00	New: Molecular Plant Breeding	3	2G
FS	751-5500-00	Simulations and Sensors in Agri-Food Supply Chains	3	2G

5.3.3 Elective/Optional Courses

Electives allow students to tailor their study to their own interests. Electives can be chosen from any courses offered by ETH Zurich or the University of Zurich*. The table shows the lectures which are allocated especially to this category in the course catalogue. The public colloquiums are available in this category only.

Sem	Course unit	Subject	CP	Hours
HS/FS	752-0005-00	Colloquium in Food and Nutrition Science	1	2K
HS	751-2105-00	New: Political Ecology of Food and Agriculture	3	2G

* Note: The registration deadlines for mobility at the University of Zurich apply (= last working day before the lecture period begins; see

www.uzh.ch/en/studies/application/chmobilityin.html)

5.3.4 Master's Thesis

In the Food Science study programme, professors and Privatdozenten (PDs) of the department D-HEST and of the department D-USYS, Agricultural Sciences, can supervise a Master's thesis. Exceptions to this rule may be granted by the Director of Studies upon written request.

A window of **28 weeks** is reserved for the Master's thesis (full-time). The 28 weeks consist of 26 weeks for the actual thesis work, plus 2 weeks to compensate for holidays, sick leave or other short-term absences. In case a prolongation for completing the Master's thesis is needed, a request has to be handed in to the Director of Studies.

Included and mandatory in the scope of the Master's thesis are an **internal presentation of the project** as well as the **creation of a poster** for the Master's degree graduation ceremony. The poster must be created in consultation with the supervisor.

As a rule, the Master's thesis is completed within the field of the major. Exceptions require the approval of the Director of Studies. Before beginning the Master's thesis, students need to meet the following **requirements**:

- completed Bachelor's degree programme,
- all requirements for admission to the Master's programme fulfilled ("Auflagen")
- a minimum of 30 CPs acquired within the Master's curriculum.

For the registration of the Master's thesis, the registration form has to be completed, signed and handed in to the study secretariat as PDF by e-mail. The thesis also has to be registered in myStudies. The study secretariat confirms the registration in myStudies after approval by the Department Conference. The submitted Master's thesis is graded by the responsible Professor and a co-supervisor.

Details about the Master's thesis as well as information about topics and the registration form can be found at:

→ www.hest.ethz.ch/en/studies/food-science/master-programme-food-science/master-regulation-2017/master-thesis

5.3.5 Master's Degree Certificate

After obtaining the necessary 90 CP, the student applies for the Master's degree certificate and the title **Master of Science ETH in Food Science** (MSc ETH Lm). The application is generated in myStudies, signed, and handed in at the study secretariat as PDF by e-mail.

A maximum of 100 CP is allowed in the final transcript of records. This means that more than 90 CP up to a maximum of 100 CP may be acquired.

5.4 Voluntary Internship

Internships are not part of the Master's programme. However, the department recommends internships and offers support in technical and administrative matters. After successful completion of a voluntary internship according to the given regulation, the department will issue a certificate. The ideal time for an internship is at the end of the Bachelor's programme.

→ www.hest.ethz.ch/en/studies/food-science/master-programme-food-science/master-regulation-2017/internship

6 Doctoral Programme in Food Science

A doctorate from ETH Zurich opens the door to first-rate research and provides qualification for a scientific career. Candidates with very good study performances apply directly to a research group. Further information can be found on the website of ETH Zurich:

→ www.ethz.ch/en/doctorate

7 Further and Continuing Education

7.1 Student Exchange

Once 180 CP of the Bachelor's programme have been completed, a student exchange semester term is possible. It is allowed to earn up to 30 CP from a guest university. The application windows are determined and published by the Student Exchange Office (Academic Services). When initiating a student exchange semester, the scope of studies has to be defined with the departmental exchange coordinator of the food science study programme.

→ www.ethz.ch/en/the-eth-zurich/organisation/departments/academic-services/student-exchange-office

7.2 Teaching Certificate

The Teaching Certificate (TC) encompasses 24 CP and permits teaching at vocational and high schools with a teaching workload of up to 50%. The certificate is recognised by the State Secretariat for Education, Research and Innovation. The programme may only be started after completion of the Bachelor's programme. The teaching certificate is awarded only after the successful completion of the Master's study programme.

→ <https://ethz.ch/de/studium/didaktische-ausbildung/studienangebot/didaktik-zertifikat.html> (in German)

7.3 Master of Advanced Studies in Nutrition and Health

Natural scientists, medical doctors, and pharmacists with a university degree are offered an advanced education that gives a broad overview on aspects of food and nutrition, their influence on health, and their potential for prevention of diseases. After completing the programme the degree with the title 'Master of Advanced Studies ETH in Nutrition and Health (MAS ETH NH)' is issued.

For more information go to:

→ www.epigenetics.ethz.ch/teaching/continuing-education

7.4 Certificate of Advanced Studies in Nutrition for Disease Prevention and Health

The continuing education programme Certificate of Advanced Studies (CAS) in Nutrition for Disease Prevention and Health is intended for pharmacists, medical doctors, movement scientists and natural scientists with Master degrees. The programme gives a broad view of nutrition themes, the influence of nutrition on health and its possibilities to prevent illnesses.

More information is available on the website of the Laboratory of Nutrition and Metabolic Epigenetics.

→ www.epigenetics.ethz.ch/teaching/continuing-education

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