

The background of the cover is a vibrant blue gradient. In the upper half, several translucent spheres in green, red, and blue float against the sky. In the lower half, a dark grey surface is covered with various mathematical and scientific symbols, including the infinity symbol ( $\infty$ ), the hash symbol ( $\#$ ), the percent sign ( $\%$ ), and the dollar sign ( $\$$ ). On this surface, the word 'Calculus' is written in large, 3D, yellow block letters. A blue ring, resembling a chemical structure or a mathematical symbol, is placed on top of the 'u' in 'Calculus'.

# Chemistry

Master of Science ETH

Study guide

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## Chemistry

### Study guide

The legal basis for this programme is the «Studienreglement 2018, Ausgabe 17.10.2017, für den Master-Studiengang Chemie». The present study guide provides practical information on the programme. Further sources of information are given in the text and at the end of this brochure. Students are requested to consult the departmental website for up-to-date information.

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# 1 Study programme

Students with an appropriate Bachelor's degree usually complete their studies in three semesters.

## 1.1 Categories of course units

In order to obtain the Master's degree students have to acquire a total of 90 credits in the following categories in no more than three years:

Category	Credits
Core subjects	18
Compulsory elective subjects	19
Research projects, industry internship and laboratory course	26
Master's thesis	25
Electives in science in perspective	2

Actual and detailed information on the courses in the various categories can be found in the online course catalogue of ETH (see page 5 for link).

## 1.2 Core subjects

Core subjects areas are «Inorganic Chemistry», «Organic Chemistry», and «Physical Chemistry». All students have to take at least one course from each of the three areas.

## 1.3 Compulsory elective subjects

Compulsory elective subjects include a broad spectrum of advanced topics in chemistry, as well as topics from related areas. Students may also take as compulsory elective subjects a) core subjects as long as they have not taken them as such, b) elective subjects from the Bachelor's degree programme.

## 1.4 Research projects, industry internship and laboratory course

Students have to carry out one research project plus either a second research project, an industry internship or the advanced laboratory course. Projects and internship has to be carried out in a core subject area or in an elective subject. Students are free to choose the area. The chosen supervisor should be contacted at an early date. (See also section 3.6)

## 1.5 Master's thesis

The Master's thesis is carried out under the supervision of a professor in a core subject area, or in an elective subject. Students are free to choose the area. The duration of the Master's thesis is 20 weeks. (See also section 3.7)

## 1.6 Electives in science in perspective (SiP)

All students must collect credits in courses offered by the Department of Humanities, Social and Political Sciences (D-GESS).

## 2 Credit system

The Master's degree programme uses a credit system which is based on the European Credit Transfer System (ECTS). Credits are a measure for the total labour required from the students to reach the educational goal. Calculations are based on a total of 1500 to 1800 working hours per year, equivalent to 60 credits. Therefore, 1 credit corresponds to 25 to 30 hours of total work.

Credits are allocated after the performance assessment intended for the course has been passed. Upon application by the student the Master's title is awarded when a total of 90 credits is reached.

## 3 Performance assessments

### 3.1 General

Credits are allocated after the performance assessment has been passed. A performance assessment not passed can be repeated once. Exams and the Master's thesis are rated with a grade between one (lowest) and six (highest). In order to pass, a grade of four must be achieved. Other performance assessments may also be rated with passed/not passed.

### 3.2 Forms of performance assessments

Performance assessments are in the form of exams, or of a semester performance. The course catalogue lists for each course the form and mode of the performance assessment. Exams are held in examination sessions during the last weeks of the semester breaks.

### 3.3 Admission to performance assessments

Admission to the performance assessments normally requires that the Bachelor's studies are completed. Exceptions are specified individually for the various categories below.

### 3.4 Core subjects

- Performance assessments in this category are in the form of exams.
- At least one exam must be taken in each of the three core subject areas «Inorganic Chemistry», «Organic Chemistry», and «Physical Chemistry».
- Students who do not pass an exam in a core subject in two attempts get one further chance with another core or compensatory subject offered in the same area.
- Students enrolled in both the Bachelor's and Master's degree programme in chemistry of ETH are admitted to examinations in core and compensatory subjects of the Master's degree programme on condition that they have to acquire no more than 11 credits in the category 'elective subjects' for their Bachelor's diploma.

- Students who were admitted to the Master's degree programme with the requirement to acquire credits from the ETH Bachelor's degree programme are admitted to examinations in core and compensatory subjects on condition that they have to acquire no more than 11 of the additional required credits.

### **3.5 Compulsory elective subjects**

- Performance assessments in this category are in the form of exams.
- Students enrolled in both the Bachelor's and Master's degree programme in chemistry of ETH are admitted to examinations in compulsory elective subjects of the Master's degree programme on condition that they have passed the examination block I and the compulsory lab courses of the ETH Bachelor's degree programme's second year.
- Students who were admitted to the Master's degree programme with the requirement to acquire credits from the corresponding ETH Bachelor's degree programme are admitted to examinations in compulsory elective subjects on condition that they have to acquire no more than 11 of the additional required credits.

### **3.6 Research projects, industry internship and laboratory course**

- Performance assessments in these categories are based on semester performance. The specific requirements to pass are published by the Department. (See also «Directives for Research Projects».)
- Students enrolled in both the Bachelor's degree and Master's degree programme in chemistry of ETH are admitted to the research projects, industry internship and laboratory course of the Master's degree programme on condition that they have to acquire less than 60 credits for their Bachelor's diploma. (See «Wegleitung für den Bachelor-Studiengang Chemie», section 2.3).

### **3.7 Master's thesis**

Details on the Master's thesis are laid down in the «Directives for Master's Theses». The Master's thesis cannot be started before the Bachelor's degree programme is completed.

## 4 Request for degree conferral

When the number of credits in the individual categories as defined in section 3.4 to 3.7 has been acquired students can submit a request for degree conferral via their student portale («myStudies») and the student administration. This has to be done no later than three years after the start of the Master's degree programme. The request must itemize the study achievements which should be listed in the final academic record. The maximum number of credits that can be taken into account is 100.

## 5 Mobility - External Academic Achievements

External academic achievements are those not acquired from the D-CHAB course offerings (LE 511-/529-/535-. Master's thesis, projects, internship and lab courses have their own rules, see corresponding sections). The director of studies decides on their crediting.

Students *with an ETH Zurich Bachelor's Degree* may spend one semester during their Master's degree programme at another university. A study programme for this semester abroad has to be compiled in advance in cooperation with the mobility advisor of the Department. Credits can be obtained externally in the categories research projects, industry internship and laboratory, course compulsory elective subjects, and Master's thesis up to a total maximum of 30 credits.

Students *without an ETH Zurich Bachelor's Degree* are not allowed to participate in exchange programmes of ETH Zurich. Individual mobility is possible but only with restricted recognition of examinations/credits. Only a Master's thesis carried out externally can be recognised. Or, if the thesis is done at D-CHAB a maximum of 13 credits in the category electives or research projects, industry internship and laboratory course can be recognised from outside of the curriculum (according to the course catalogue) or of D-CHAB.

## 6 Academic year

Teaching is organised in two semesters of 14 weeks each. The Autumn semester lasts approximately from mid-September until Christmas, the Spring semester approximately from mid-February to the end of May. The academic year begins with the fall semester.

Most of the courses in the Master's degree programme, especially lectures, are offered in the Autumn semester. With the consent of the respective supervisors laboratory course, research projects and industry internship may also be

available in the Spring semester and during semester breaks.

## 7 Documentation

- Study regulation (in German only: Studienreglement 2018, Ausgabe 17.10.2017, für den Master-Studiengang Chemie)
- General Regulations on Performance Assessments at ETH Zurich (in German only: Leistungskontrollenverordnung ETH Zürich)
- Directives concerning compulsory electives in science in perspective (Directive "Science in Perspective" (SiP) programme of the Department of Humanities, Social and Political Sciences (D-GESS))

## 8 Websites

- Info on the programme: [www.chab.ethz.ch/en/studies/master/msc-chemistry.html](http://www.chab.ethz.ch/en/studies/master/msc-chemistry.html)
- Department: [www.chab.ethz.ch](http://www.chab.ethz.ch)
- ETH Student portal: [www.ethz.ch/students/en.html](http://www.ethz.ch/students/en.html)
- Website for students: [www.ethz.ch/en/studies.html](http://www.ethz.ch/en/studies.html)
- Admissions Office: [www.admission.ethz.ch](http://www.admission.ethz.ch)
- Course catalogue: [www.vvz.ethz.ch](http://www.vvz.ethz.ch)

For detailed information on admission requirements, application and registration procedures and deadlines consult the website of the ETH Admissions Office.

**Director of studies**

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**Student administration**

Ms Martina Albertini, HCI H201  
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Office hours: Monday – Wednesday, 08-12 and 14-16

**Exchange programme**

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Consultation upon arrangement with the student administration

**Student association**

Association of chemistry students at ETH Zurich (VCS)  
[www.vcs.ethz.ch](http://www.vcs.ethz.ch)