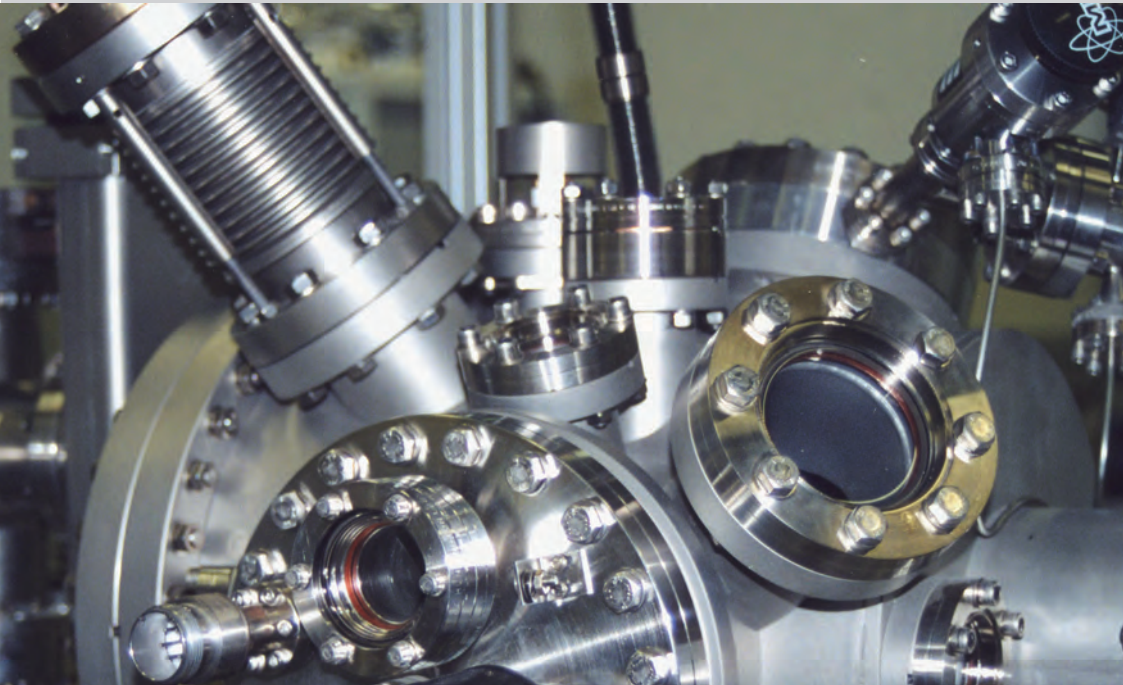


D-CHAB

Study guide

Master of Science ETH Chemical and Bioengineering



Master of Science ETH

Chemical and Bioengineering

Study guide

The legal basis for this program is the «Studienreglement 2005, Ausgabe 16.o8.2006-1, für den Master-Studiengang Chemie- und Bioingenieurwissenschaften». The present study guide provides practical information on the program. 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 program

Students with an appropriate bachelor degree can complete their studies in two 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	28
Compulsory elective subjects	17
Laboratory courses, research projects, case studies	23
Master thesis	20
Electives in humanities, social and political sciences	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 «Bioengineering», «Polymers», «Process Design», and «Catalysis». Students have to take at least one course from each area.

1.3 Compulsory elective subjects

Compulsory elective subjects include a broad spectrum of advanced topics in chemical and bioengineering, process engineering and as well as topics from related areas. Students may also take as compulsory elective subjects core subjects as long as they have not taken them as such.

1.4 Laboratory courses and research projects

Students have to carry out a laboratory course in chemical engineering, as well as a research project 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 Case study in process design

Investigation of an industrial process in a teamwork project with simulation, cost calculations, sensitivity analyses and optimizations.

1.6 Master thesis

The master thesis is carried out under the supervision of a professor in a research group of the Department of Chemistry and Applied Biosciences, usually at the Institute of Chemical and Bioengineering. Students are free to choose the area. The duration of the master thesis is 16 weeks. (See also section 3.7).

1.7 Electives in humanities, social and political sciences

All students must collect credits in courses offered by the Department of Humanities, Social and Political Sciences.

2 Credit system

The master program 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 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 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 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 four core subjects areas «Bioengineering», «Polymers», «Process Design», and «Catalysis».
- Students who do not pass an exam in a core subject in two attempts get one further chance with another core subject offered in the same area.

- Students enrolled in both the bachelor program in chemical engineering and the master program in chemical and bioengineering of ETH are admitted to examinations in core subjects of the master program on condition that they have to acquire no more than 11 credits in the category 'compulsory subjects' for their bachelor diploma.
- Students who were admitted to the master program with the requirement to acquire credits from the ETH bachelor program are admitted to examinations in core subjects on condition that they have to acquire no more than 11 of the required credits.

3.5 Compulsory elective subjects

- Students enrolled in both the bachelor program in chemical engineering and the master program in chemical and bioengineering of ETH are admitted to examinations in compulsory elective subjects of the master program on condition that they have to acquire no more than 11 credits in the category 'compulsory subjects' to obtain their bachelor diploma.
- Students who were admitted to the master program with the requirement to acquire credits from the corresponding ETH bachelor program are admitted to examinations in compulsory elective subjects on condition that they have to acquire no more than 11 of the required credits.

3.6 Laboratory courses, research projects, case studies

- 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 program in chemical engineering and the master program in chemical and bioengineering of ETH are admitted to laboratory courses and research projects of the master program on condition that they have to acquire less than 60 credits for their bachelor diploma. (See «Wegleitung für den Bachelorstudiengang Chemieingenieurwissenschaften», section 2.3).

3.7 Master thesis

Details on the master thesis are laid down in the «Directives for Master Theses». The master thesis cannot be started before the bachelor program is completed.

4 Request for degree conferral

When the number of credits in the individual categories as defined in section 3.1 has been acquired students can submit a request for degree conferral to the director of studies via the student administration. This has to be done no later than three years after the start of the master program. 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 Exchange program

Students may spend one semester during their master program at another university. A study program for this semester abroad has to be compiled in advance in cooperation with the mobility advisor of the Department. Credits can be obtained abroad in the categories laboratory courses and research projects, compulsory elective subjects, and master thesis up to a total maximum of 30 credits.

6 Academic year

Teaching is organized in two semesters of 14 weeks each. The fall 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.

Students will normally enter the master program in the fall semester. However, entrance in the spring semester is also possible and especially recommendable to students who have to fulfill admission requirements such as a request to collect additional credits in particular areas.

Most of the courses in the master program, especially lectures, are offered in the fall semester. With the consent of the respective supervisors, laboratory courses and research projects may also be available in the spring semester and during semester breaks.

7 Documentation

- Study regulation (in German only: Studienreglement 2005, Ausgabe 16.08.2006-1, für den Master-Studiengang Chemie- und Bioingenieurwissenschaften)
- General Regulations on Performance Assessments at ETH Zürich (in German only: Allgemeine Verordnung über Leistungskontrollen an der ETH Zürich)
- Directives concerning electives in humanities, social and political sciences (in German only: Weisung zum Pflichtwahlfach aus dem Bereich der Geistes-, Sozial- und Staatswissenschaften)

8 Websites

- Info on the program: www.chab.ethz.ch/lehre/ci_msc/index_EN
- Department: www.chab.ethz.ch
- ETH Rectorate: www.rektorat.ethz.ch/index_EN
- Website for prospective students: www.ethz.ch/prospectives/index_EN
- Admissions Office: www.admission.ethz.ch
- Web portal for students: www.ethz.ch/students/index_EN
- Course catalogue: 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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Exchange program

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Advisor for female students

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Student association

Association of chemistry students at ETH (VCS)
www.vcs.ethz.ch