

Department of Computer Science

Programme Regulations 2007

Master Programme in

Computational Biology and Bioinformatics

14 March 2007

(English is not an official language of the Swiss confederation. This translation is provided for information purposes only and has no legal force.)

	Article
Chapter 1: General Regulations	1 – 12
Chapter 2: Content, Design and Structure of the Master Programme	13 – 20
Chapter 3: Admission to the Master Programme	21 – 25
Chapter 4: Performance Assessment Regulations	26 – 34
Chapter 5: Issuing the Master Degree	35 – 38
Chapter 6: Final Regulations	39 – 41
Appendix	

Department of Computer Science
Programme Regulations 2007
Master Programme in Computational Biology and Bioinformatics

of 14 March 2007

(English is not an official language of the Swiss confederation. This translation is provided for information purposes only and has no legal force.)

The ETH Zurich Executive Board,
pursuant to Art. 4, Para. 1, Lit. a of the ETH Zurich Organisation Ordinance
of 16 December 2003¹,
hereby decrees:

Chapter 1: General Regulations

Section 1: General

Art. 1 Subject-matter and Scope, Appendix

¹ These Programme Regulations determine the requirements under which the Master degree in Computational Biology and Bioinformatics can be acquired at ETH Zurich, Department of Computer Science (hereafter referred to as D-INFK).

² The Appendix is part of these Programme Regulations. Any modifications to the Appendix are decided by the Rector, upon the request of, or following a hearing with D-INFK.

Art. 2 Cooperation with other Universities and other
ETH Zurich Departments

The Master programme in Computational Biology and Bioinformatics (hereafter referred to as CBB) is carried out in close cooperation with other universities and other ETH Zurich departments (hereafter referred to as partners). The partners are listed in the Appendix under Item 1.

Art. 3 Legal Basis

These Programme Regulations are based on the following legal provisions:

- a. ETH Zurich General Ordinance on Performance Assessments of
10 September 2002² (AVL ETHZ – acronym for German document);

¹ RSETHZ **201.021** (available in German only)

² SR **414.135.1**, RSETHZ **322.021** (available in German only)

- b. Ordinance on Admission to Studying at ETH Zurich of 10 September 2002³ (Zulassungsverordnung ETHZ).

Art. 4 Academic Title

¹ The Master degree in Computational Biology and Bioinformatics entitles its holders to bear the following academic title:

Master of Science ETH in Computational Biology and Bioinformatics
(abbreviated title: MSc ETH CBB).

² Holders of this Master degree can also use the abbreviated title “MSc ETH”.

Art. 5 Limited number of places available

¹ The number of places available for the CBB Master programme is limited.

² Every year D-INFK defines the number of places available for each academic year and is responsible for publishing the number of places available.

Art. 6 Course Catalogue

D-INFK determines the CBB Master programme courses for each semester, listing them in the course catalogue which is binding. This catalogue is submitted to the Rector for approval within the period stipulated. Details are specified in Art. 28 AVL, ETHZ⁴ and in the corresponding implementation provisions.

Art. 7 Language of Instruction

¹ Teaching is normally in English. The language used in any particular course is given in the course catalogue. Performance assessments are normally conducted in the language used in the course.

² Students may complete a performance assessment in German even if the assessment is normally conducted in English. Students wishing to complete the assessment in German must inform the responsible examiner in writing at the latest when they register for the assessment. Courses not offered by ETH Zurich may be excluded from this provision.

³ Students, who wish to complete a performance assessment in a language other than English or German, must obtain the agreement of the responsible examiner. An official request must be submitted within the deadline indicated under Para. 2.

³ SR 414.131.52, RSETHZ 310.5 (available in German only)

⁴ SR 414.135.1, RSETHZ 322.021 (available in German only)

Section 2: Credit System

Art. 8 Principle

¹ The study programme is based on a credit system in accordance with the European Credit Transfer System (ECTS).

² The implementation of ECTS at ETH Zurich is defined in the Guidelines⁵ on the Credit System.

Art. 9 Credits, Basis for Calculating Credits

¹ Credits define the average amount of time required for a study performance.

² When studying full-time, the entire student workload for each year of study comprises an average of 60 credits. The student workload includes all study-related activities necessary to obtain credits.

Art. 10 Allocation of Credits

¹ D-INFK allocates a certain number of credits to its own courses, which are subsequently specified in the course catalogue.

² For courses that are part of the curriculum of several study programmes, the department offering the course uniformly allocates the credits following consultation with the departments concerned. The Rector decides in the case of disagreement.

Art. 11 Issuing Credits

¹ Credits are only issued for satisfactory performance. Study performances are considered satisfactory, if they are graded with at least 4 or as “passed”.

² No credits are issued for unsatisfactory performance.

³ The full amount of credits is always issued for the course in question, once the prerequisites under Para. 1 have been fulfilled. Partial issuing of credits is not allowed.

⁴ The number of credits to be issued is determined by the course catalogue valid at the time at which the performance assessment is completed.

Art. 12 Registering, Managing and Checking Credits

D-INFK registers, manages and checks the credits.

⁵ The guidelines can be accessed online at: www.rektorat.ethz.ch/directives

Chapter 2: Content, Design and Structure of the Master Programme

Section 1: Content of the Programme, Structure and Extent

Art. 13 Content of the Programme, Structure

¹ Computational Biology and Bioinformatics (CBB) is an interdisciplinary area in which both computational processing and methodology are developed and used to tackle and solve current problems in the field of Biology. The range of subjects is complemented with lectures in Biology, Computer Science and Mathematics, and with so-called Applications (research projects). Students gain practical experience through these interdisciplinary research projects. They can also choose from general education courses in Humanities, Social and Political Sciences (GESS).

² Professors, who act as mentors, are responsible for the content and coordination of the education provided in the CBB Master programme. Details on mentoring are specified in Art. 15.

Art. 14 Extent and Duration of the Programme, Limitation on the Duration of Studies

¹ It is necessary to obtain 90 credits, as indicated under Art. 35, to acquire the Master degree. At least 60 of the required 90 credits must be acquired at ETH Zurich or at a partner institution (see Appendix, Item 1).

² The CBB Master programme is designed to be completed within one and a half years.

³ The maximum duration of studies is three years. Upon request, the Rector can extend the duration of studies for compelling reasons.

⁴ Should admission to the CBB Master programme be stipulated with the need to fulfil additional requirements, this entitles the extension of the maximum duration of studies as follows:

- six months to acquire 21 – 30 additional credits;
- one year to acquire 31 – 60 additional credits.

Should less than 21 additional credits have to be acquired, the maximum duration of studies is not extended.

Art. 15 Mentoring System, Individual Study Plan

¹ The CBB Master programme is led by mentors.⁶

² Upon applying for admission to the CBB Master programme, students must give in the names of three mentors listed in order of preference.

³ At the beginning of the Master programme, the mentor determines an individual study plan along with the student. The study plan should ensure an excellent and specialised education, and also takes the student's talents and expectations into consideration. Furthermore, mentors coach their students throughout the programme, monitor their progress and, if required, are available for counselling.

⁴ The Director of Studies can approve a request to change mentors in the case of compelling reasons. When changing mentors, the following also applies:

- a. It is only possible to change at the beginning of a semester.
- b. Changing mentors does not entitle an extension of the allowed maximum duration of studies.
- c. The Rector decides in case of disagreement between the Director of Studies and the concerned student.

Art. 16 Study Guide

¹ D-INFK compiles, in collaboration with the mentors, a study guide to the CBB Master programme. It provides a detailed overview of the study programme as well as the corresponding course recommendations.

² The D-INFK student exchange advisor answers questions relating to study exchange. Details are specified in Art. 18.

Art. 17 Recognition of Study Achievements Acquired outside the Master Programme

Upon consulting with the responsible mentor, the Director of Studies ultimately decides on the recognition of study achievements acquired in other ETH Zurich study programmes, at a partner institution or at other universities (e.g. exchange programme) during the Master programme. Performance evaluations are handled in accordance with Art. 12, AVL ETHZ⁷.

⁶ Available mentors and their research areas can be accessed online at: www.cbb.ethz.ch

⁷ SR 414.135.1, RSETHZ 322.021 (available in German only)

Art. 18 Student Exchange

¹ During the Master programme, students can acquire credits at other universities other than ETH Zurich or the University of Zurich. Of these mobility credits, a maximum of 30 can be recognised to obtain the Master degree. If requested by the student, any additional mobility credits are listed in the addendum to the final academic record.

² Credits for courses at other universities offered as part of the curriculum for the CBB Master programme do not count as mobility credits.

³ Students, who wish to spend an exchange semester at another university, must first prepare a written study programme in collaboration with their mentor. This study programme specifies the credits to be acquired at the host university and must be approved by the student exchange advisor.

Section 2: Grouping according to Category

Art. 19 Grouping according to Category

¹ To acquire the Master degree, it is necessary to have study achievements in the following categories. The minimum number of credits required in each category is indicated in Art. 35:

- a. Core Courses;
- b. Advanced Courses and Methods of Computer Science;
- c. Applications (Research Projects);
- d. Compulsory Electives in Humanities, Social and Political Sciences;
- e. Master Thesis.

² D-INFK specifies in the course catalogue which courses are allocated to each category as listed in Para. 1.

Art. 20 Category Overview

¹ **Core Courses:** They transfer basic knowledge in the field of Computational Biology and Bioinformatics and are grouped into the following three focus areas:

- Sequences
- Structures
- Systems

The category Core Courses also comprises seminars that allow insight into current research topics in the field of Computational Biology and Bioinformatics. Further details on attending core courses and on the performance assessments are specified in Art. 32.

² **Advanced Courses and Methods of Computer Science:** The advanced courses are taken from the fields of Computer Science, Biology and Mathematics and allow an in-depth education in the fields specified based on the student's specific interests. In the courses "Methods of Computer Science", students acquire the relevant computational knowledge necessary for the field of Computational Biology and Bioinformatics. Details on the performance assessments are specified in Art. 32.

³ **Applications (Research Projects):** Students learn to transfer and apply their knowledge by working independently in the laboratory or on projects. By applying knowledge acquired from the core and advanced courses, and the Methods of Computer Science course, students gain insight into different research areas. Further details on carrying out research projects and on the performance assessments are specified in Art. 33.

⁴ **Compulsory Electives in Humanities, Social and Political Sciences:** Students have to choose courses from the general education courses in Humanities, Social and Political Sciences (GESS). Further details are specified in the Rector's directives on the GESS compulsory electives and in Art. 32 of these Programme Regulations.

⁵ **Master Thesis:** It normally concludes the Master programme. By writing up the Master thesis, students show their ability to independently produce a coherent and scientific piece of work. Details are specified in Art. 34.

Chapter 3: Admission to the Master Programme

Art. 21 Application Prerequisites for Admission

¹ To apply for admission to the CBB Master programme, candidates must fulfil the following prerequisites:

- a. They hold a Bachelor degree corresponding to at least 180 ECTS credits, or an equivalent university degree or a degree from a Swiss University of Applied Sciences in one of the scientific disciplines qualifying for the CBB Master programme. The qualifying disciplines that normally come into question and further details on the required scientific knowledge (requirement profile) for the CBB Master programme are listed in the Appendix under Item 2 – 4.
- b. Candidates have adequate knowledge of English. If requested, they must be able to provide proof.
- c. If requested, candidates must provide proof that they would be admitted to the Master programme of the corresponding discipline at their home university or in their country of origin, should such a programme be available.

² The Rector decides on any exceptions on the request of D-INFK.

Art. 22 Admission Procedure

Candidates send their application for admission to the CBB Master programme to the Rectorate, ETH Zurich. They can submit their application before they have acquired their degree. The way in which applications are managed is determined by the Rector. The following also applies:

- a. Along with their application, candidates should include:
 1. a personal letter of application in English outlining their motivation and goals in pursuing the CBB Master programme as well as the names of three mentors listed in order of preference;
 2. a letter of reference written by a professor from the degree-granting university;
 3. other documents⁸ (if any) relevant for the evaluation of their application.
- b. The CBB Admissions Committee evaluates the candidates' applications in terms of their academic qualifications and aptitude for the Master programme. The Committee requests the Director of Studies to either admit or reject the candidate, including, if necessary, any additional requirements.
- c. Upon the request of the Director of Studies, the Rector decides on admission or rejection and on any additional requirements.

⁸ Such documents include, for example, information on scientific or subject-specific publications, awards, confirmation letters for internships, or the results of the Graduate Record Examinations Test (GRE-Test); scores should be submitted using the ETH Institution Code: R 3331.

Art. 23 Admission without Additional Requirements

Admission to the CBB Master programme without having to fulfil additional requirements is normally only granted to candidates who fulfil the prerequisites of Art. 21 as well as the scientific requirement profile listed in the Appendix under Item 3.

Art. 24 Rejection of Admission

Candidates required to take additional courses (additional requirements) of more than 60 credits are not admitted to the CBB Master programme.

Art. 25 Entry to the Master Programme

¹ ETH Zurich students granted a positive decision on admission can enrol for the CBB Master programme when they only need to acquire the number of credits for the Bachelor degree which subsequently allows them to enrol for the consecutive Master programme in their own scientific discipline.⁹ The following also applies:

- a. The regular dates and deadlines for enrolment at ETH Zurich are applicable.
- b. Admission is conditional if the Bachelor degree still has to be completed. The admission is revoked, if the Bachelor degree has not been acquired or cannot be acquired.

² Candidates, who hold a positive decision on admission, but have not studied at ETH Zurich, can only enrol for the CBB Master programme when they have obtained their (Bachelor) degree.

³ The Rector decides on any exceptions on the request of D-INFK.

⁹ Example: Bachelor in Computer Science and consecutive admission to the Master programme in Computer Science. The permitted number of credits still to be acquired is specified in the Programme Regulations of the consecutive Master programme in Computer Science.

Chapter 4: Performance Assessment Regulations

Section 1: General Regulations

Art. 26 Types of Performance Assessment, Performance Evaluation

¹ The CBB Master programme primarily involves the following types of performance assessment:

- a. examinations;
- b. written reports and papers;
- c. presentations;
- d. project reports and results.

² Performance in an examination is graded. Other types of performance assessments are evaluated with a grade or with “passed/failed”.

Art. 27 Conditions of Admission to Performance Assessments

¹ Conditions of admission to performance assessments can be implemented.

² D-INFK verifies that any conditions of admission to performance assessments have been fulfilled.

Art. 28 Registration for End-of-Semester Examinations and Examination Sessions, Carrying out Examinations

The AVL ETHZ regulations¹⁰ and the Rector’s directives apply with respect to registering for end-of-semester examinations and for examinations in the examination sessions as well as for carrying out examinations.

Art. 29 Registration for other Performance Assessments

Registration is normally done directly via the responsible examiner for performance assessments that do not come under Art. 28.

Art. 30 Performance Assessments for Additional Requirements

¹ Performance assessments for courses defined as additional requirements for admission to the CBB Master programme can be grouped into examination blocks. Any such examination blocks are to be specified in the admission decree.

¹⁰ SR 414.135.1, RSETHZ 322.021 (available in German only)

² If no examination blocks are formed, an appropriate means of compensation is to be provided should a performance assessment be failed twice.

³ Candidates may complete a performance assessment in either German or English even if the assessment is normally conducted in the other language. Students wishing to complete the assessment in the other language must inform the responsible examiner in writing at the latest when they register for the assessment.

⁴ Should the additional requirements not be completely fulfilled due to the student having failed performance assessments, admission to the CBB Master programme is revoked. Should such candidates apply for a Bachelor programme at ETH Zurich and be admitted, the following rules are effective for performance assessments already carried out to fulfil additional requirements:

- a. Performance assessments or examination blocks that have been passed can be recognised in the Bachelor programme. Any recognised performance assessments are allocated credits.
- b. No credits are allocated for performance assessments that have not been passed.
- c. The Rector decides on the recognition of credits upon the request of the responsible department.

Art. 31 Dishonest Behaviour

Details on dealing with dishonest behaviour with respect to performance assessments are specified in the ETH Zurich Disciplinary Code of 2 November 2004¹¹.

¹¹ SR 414.138.1, RSETHZ 361.1 (available in English: RSETHZ 361.1 engl.)

Section 2: Performance Assessments

Art. 32 Core Courses, Advanced Courses and Methods of Computer Science, GESS Compulsory Electives

¹ Each course pertaining to the categories Core Courses, Advanced Courses and Methods of Computer Science including the GESS Compulsory Electives is evaluated with a performance assessment.

² The type and the timing of the performance assessments are specified in the course catalogue should the courses be offered by ETH Zurich.

³ Should the course be offered by another university, students are expected to inform themselves about the modalities for the performance assessment at that particular university.

⁴ A performance assessment is considered as passed if it is graded with at least 4 or as “passed”.

⁵ A performance assessment considered as failed can be repeated once, provided that the ETH Zurich department or the university offering the performance assessment does not have any other regulations about repeating performance assessments.

⁶ Additionally, to acquire the Master degree, the following conditions must be fulfilled for the category Core Courses:

- a. It is necessary to have passed the mandatory seminar.
- b. At least one core course from each of the following three focus areas has to be taken and the relevant performance assessment must be passed:
 - Sequences;
 - Structures;
 - Systems.
- c. Should a core course be attended that is offered in more than one focus area then the corresponding credits can only be recognised for one focus area.

Art. 33 Applications (Research Projects)

¹ Students work independently during the applications (research projects). Performance is evaluated with a grade or with “passed/failed”.

² A research project considered as failed cannot be repeated. It is then necessary to attend another research project. Students are allowed to make a maximum of six attempts to obtain the required 9 credits in accordance with Art. 35, Para. 1, Lit. c.

³ Additionally, to acquire the Master degree, the following condition must also be fulfilled: At least one research project with emphasis on Experimental Biology and one with emphasis on Theory/Computer Science have to be taken and passed.

Art. 34 Master Thesis

¹ Only students, who fulfil the following criteria, are allowed to write up the Master thesis:

- a. They have successfully completed the Bachelor programme.
- b. They have fulfilled any additional requirements necessary to gain admission to the CBB Master programme.
- c. They have acquired the necessary credits for the following categories: 30 credits for the Core Courses and 9 credits for the Applications (Research Projects) (see Art. 35, Para. 1, Lit. a and c).

² The Master thesis can be carried out at either ETH Zurich, at a partner institution, at an industrial enterprise, or at a research institute (laboratory) inside or outside the ETH domain. The thesis is supervised by one or more professors and other experts (if any). This also applies for Master theses done outside ETH Zurich.

³ The Master thesis is written over a period of six months (full-time study). Upon request, the Director of Studies can extend the duration of work by up to three months for compelling reasons. The decision of the Director of Studies is final.

⁴ Students usually consult their mentors and select the topic of their Master thesis. The thesis supervisor defines the task, determines the beginning of the Master thesis, the date of submission and the evaluation criteria. The Master thesis should be technically and scientifically innovative.

⁵ The Master thesis concludes with a written report and an oral presentation. The performance is evaluated with a grade.

⁶ If the supervisor agrees, the Master thesis can be carried out as a group project. The supervisor determines with the concerned students how the tasks will be shared. Each group member's performance is individually graded.

⁷ The Master thesis is considered as passed if it is graded with at least 4.

⁸ A Master thesis considered as failed can be repeated once. If the Master thesis is repeated, a new topic must be treated. It can be repeated under the guidance of a new supervisor.

Chapter 5: Issuing the Master Degree

Art. 35 Credits in each Category

¹ The 90 credits required to obtain a Master degree must be acquired in the following categories in the minimum number indicated for each category. Further details are specified in Para. 2 – 5.

- | | |
|---|------------|
| a. Core Courses | 30 credits |
| 1) Sequences | |
| 2) Structures | |
| 3) Systems | |
| b. Advanced Courses and Methods of Computer Science | 19 credits |
| 1) Advanced Courses (min. 9 credits) | |
| 2) Methods of Computer Science (min. 10 credits) | |
| c. Applications (Research Projects) | 9 credits |
| 1) with emphasis on Experimental Biology | |
| 2) with emphasis on Theory/Computer Science | |
| d. GESS Compulsory Electives | 2 credits |
| e. Master Thesis | 30 credits |

² The following points also apply for the category Core Courses in accordance with Para. 1, Lit. a:

- a. At least one core course must be taken in each of the three focus areas *Sequences*, *Structures* and *Systems* and the corresponding performance assessment must be passed.
- b. The mandatory seminar must be passed.

³ Out of the required 19 credits in the category Advanced Courses and Methods of Computer Science according to Para. 1, Lit. b, at least 9 must be acquired in the advanced courses and at least 10 credits in Methods of Computer Science.

⁴ In accordance with Para. 1, Lit. c, at least one application focusing on Experimental Biology and one focusing on Theory/Computer Science must be passed in the category Applications (Research Projects).

⁵ Credits for courses that are part of both Bachelor and Master programmes can only be recognised for the Master degree, if they have not already been recognised for the Bachelor degree.

Art. 36 Request to Issue the Degree

¹ Once the requirements in accordance with Art. 35 have been fulfilled, students can apply within three years after having begun the Master programme to be issued with the Master degree. Upon request, the Rector can extend this time limit for compelling reasons.

² The application should indicate the performance assessments passed from the categories specified in Art. 35, Para. 1 to be listed in the final academic record. The total number of credits for each category must correspond to the minimum number of credits specified in Art. 35, Para. 1.

³ A maximum of 100 credits are recognised for the Master degree. If requested by the student, additional credits are listed in the addendum to the final academic record.

Art. 37 Interim Academic Record, Final Academic Record, Grade Point Average

¹ Interim academic records are generally issued at the end of the examination sessions and contain any study performances evaluated since the last interim academic record.

² The following are listed in the final academic record:

- a. The grades and other performance evaluations in accordance with Art. 36, Para. 2, and the grade point average calculated from the grades.
- b. Additional performance evaluations are listed in the addendum to the final academic record in accordance with Art. 36, Para. 3.

³ The grade point average in the final academic record (= final grade) is calculated as a weighted mean of the individual grades with the credits as weights listed in the application (Art. 36, Para. 2). The grade for the Master thesis is weighted with 30.

⁴ D-INFK records, checks and manages the grades and other performance evaluations, and issues the academic records.

Art. 38 Certificate, Diploma Supplement, Publication

¹ Graduates, who obtain the Master degree, receive a certificate and a diploma supplement.

² The Rectorate publishes the names of graduates who acquire a Master degree.

Chapter 6: Final Regulations

Art. 39 Exclusion from the Master Programme

Exclusion from the CBB Master programme generally results from not being able to acquire the required number of credits, as indicated in Art. 35, due to

- a. having failed the performance assessments twice; or
- b. having exceeded the allowed maximum duration of study.

Art. 40 Transcript of Records

Should a student be excluded from the CBB Master programme before he/she acquires the Master degree, or drops out of the study programme, he/she is given a transcript of records. This transcript lists all the evaluated study achievements carried out before being excluded from or dropping out of the programme.

Art. 41 Effective Date

These Programme Regulations come into effect at the beginning of the Autumn Semester 2007. These regulations are effective for students who begin the CBB Master programme on or after this date.

On behalf of the ETH Zurich Executive Board

President a.i.: Osterwalder

Delegate: Bretscher

Appendix

to the Programme Regulations 2007 for the
Master Programme in Computational Biology and Bioinformatics (CBB)

approved by the Rector on 14 March 2007

1. Cooperation with other universities and other ETH Zurich departments

(Ref: Art. 2 of the Programme Regulations)

The CBB Master programme is carried out in close cooperation with the universities and ETH Zurich departments listed below (= partner).

Partner:

- University of Zurich
- Departments of ETH Zurich:
 - Biology (D-BIOL)
 - Information Technology and Electrical Engineering (D-ITET)
 - Mathematics (D-MATH)

In due course more partners may join the programme.

The required scientific prerequisites for the CBB Master programme are listed below:

- **Item 2 und 3** specify the details for **university graduates**.
- **Item 4** specifies the details for graduates from a **University of Applied Sciences**.

2. University degrees that qualify to apply for admission to the CBB Master programme (= qualifying scientific disciplines)

(Ref: Art. 21, Para. 1, Lit. a of the Programme Regulations)

To be able to apply for admission to the CBB Master programme, candidates should hold a Bachelor degree corresponding to at least 180 ECTS credits or an equivalent university degree, or be enrolled at the time of their application in one of the scientific disciplines qualifying for the CBB Master programme.

The qualifying scientific disciplines for the CBB Master programme are, in particular, the following (in alphabetical order):

- Applied Biosciences
- Biochemistry
- Biology
- Chemical Engineering
- Chemistry
- Computational Science and Engineering
- Computer Science
- Electrical Engineering (and Information Technology)
- Materials Science
- Mathematics
- Mechanical Engineering
- Microengineering
- Pharmaceutical Sciences
- Physics

3. Requirements for admission to the CBB Master programme (Requirement Profile)

(Ref: Art. 21, Para. 1, Lit. a of the Programme Regulations)

- 3.1** The CBB Master programme requires basic and subject-related knowledge and abilities in technical and/or natural scientific disciplines. This knowledge forms the minimal scientific requirement profile that must be fulfilled for admission (see Item 3.2).

The CBB Admissions Committee evaluates to what extent the candidate's previous education corresponds to the requirement profile (individual evaluation of dossiers). Any lack of knowledge and abilities must be compensated for by fulfilling additional courses (= additional requirements). Should the additional requirements exceed more than 60 credits, admission to the CBB Master programme is not granted (see Art. 24 of the Programme Regulations).

- 3.2** The **requirement profile** is based on knowledge and abilities imparted by an ETH Zurich Bachelor programme in a technical and/or natural scientific discipline, and corresponds to **110 ECTS credits**. This also includes the relevant methodological, scientific way of thinking.

The requirement profile is divided into the following two parts. Both parts define the knowledge and abilities which constitute a mandatory essential basis for the CBB Master programme.

Part 1 comprises **75 credits** and includes basic subject-specific knowledge and abilities in natural scientific/technical fields (Natural Sciences, Mathematics, Physics, Computer Science, Engineering Science). Usually, this knowledge is acquired during a Bachelor programme in one of the qualifying disciplines listed in Item 2.

Part 2 comprises **36 credits** and includes basic knowledge of the fields of Computer Science, Biology and Mathematics. Courses previously attended by the applicants are evaluated on the basis of the courses listed below that belong to the curriculum of the ETH Zurich Bachelor programmes in Computer Science and Biology. The credits allocated are a benchmark for the scope of the course. The content of each course is described in the ETH Zurich course catalogue (www.courses.ethz.ch).

Minimum knowledge required in the fields of Computer Science, Biology and Mathematics :

- | | |
|-----------------------------------|------------|
| – Introduction to Programming | 8 credits |
| – Data Structures and Algorithms | 7 credits |
| – Mathematics I + II | 11 credits |
| – Statistics for Scientists | 3 credits |
| – Fundamentals of Biology IA + IB | 10 credits |
| – Bioinformatics I | 6 credits |

4. Degree from a Swiss University of Applied Sciences

(Ref: Art. 21, Para. 1, Lit. a of the Programme Regulations)

4.1 Application requirements

Students or graduates from a Swiss University of Applied Sciences (FH) can apply for admission to the CBB Master programme, if they fulfil the following requirements:

- a. they hold a Bachelor degree in one of the qualifying disciplines listed in Item 2 of this Appendix (or they are, at the time of their application, enrolled in one of these disciplines); and
- b. this qualifying discipline or study programme is listed in the “CRUS-KFH-COHEP concordance list”.¹²

The Rector decides on any exceptions upon the request of D-INFK.

¹² The „CRUS-KFH-COHEP concordance list“ is part of the agreement between CRUS, KFH and COHEP of 5 November 2007 concerning mobility between the different types of universities.

4.2 Fulfilling the Requirement Profile

Graduates from a university of applied sciences can only fulfil the requirement profile specified in Item 3.2 of this Appendix by carrying out additional requirements amounting to 60 credits. The additional requirements comprise:

- a. study achievements required at ETH Zurich to gain admission to a consecutive Master programme of the same scientific discipline (Example: degree in Computer Science from a university of applied sciences followed by admission to an ETH Zurich Master programme in Computer Science); and
- b. acquiring basic knowledge in the fields of Computer Science, Biology and Mathematics as specified in Part 2 of the requirement profile should this knowledge not already have been acquired at the university of applied sciences or from another university study programme.

Should graduates from a university of applied sciences be granted admission to an ETH Zurich consecutive Master programme of the same scientific discipline, the additional requirements to gain admission to the CBB Master programme should in any case not exceed a maximum of 60 credits (total from Lit. a and b).