REGULATIONS FOR THE CONTROL OF STUDIES OF THE SECTION OF MATHEMATICS for the 2021-22 academic year
May 26, 2021

The management of the Swiss Federal Institute of Technology Lausanne

Having regard to the ordinance on education leading to the bachelor's and master's degrees of the EPFL of June 14, 2004,
Having regard to the ordinance on the control of studies leading to the bachelor's and master's degrees at EPFL of June 30, 2015,
having regard to the study plan of the Mathematics Section within the framework of studies in Mathematics and Mathematical Engineering

Art. 1 - Scope of application

The present regulation establishes the rules for the control of bachelor and master studies of the Mathematics Section within the framework of the studies in Mathematics and Mathematical Engineering which refer to the academic year 2021-2022.

Art. 2 - Training stages

1. The Bachelor's degree in Mathematics is composed of two successive stages of training:
   - the one-year propaedeutic cycle, the successful completion of which results in 60 ECTS credits acquired at once, a condition for entry into the bachelor's cycle;
   - the two-year Bachelor's program, which requires 120 credits to enter the Master's program.

2. The Master in Mathematics is composed of two successive stages of training:
   - the Master's program, which lasts two semesters and requires the acquisition of 60 credits, a condition for completing the master's project. This cycle can be completed by a minor of 30 credits;
   - the 17-week Master's project, which, if successfully completed, will earn 30 credits. It is placed under the responsibility of a professor or MER affiliated with the Mathematics Section. The Master's project begins on the first day of classes of a semester, as indicated in the academic calendar.

3. The Master in Mathematical Engineering is composed of 2 successive stages of training:
   - the three-semester Master's program, which requires 90 credits to be successfully completed. It includes an engineering internship lasting 4 to 6 months, the successful completion of which implies the acquisition of 30 credits, a condition for completing the master's project. A student may replace the internship with a minor. In this case, he/she must complete an internship of 8 to 25 weeks, validated with the 30 credits of the master project, between the end of the second semester of the master cycle and the beginning of the master project;
   - the 17-week Master's project, the successful completion of which implies the acquisition of 30 credits. The master project is placed under the responsibility of a professor or MER affiliated with the Mathematics Section. The Master's project begins on the first day of classes of a semester, as indicated in the academic calendar.

Art. 3 - Examination sessions

1. Sessional courses are examined during the winter or summer sessions. They are mentioned in the study plan with the mention H or E.

2. Semester courses are taken in the fall or spring semester. They are listed in the syllabus as Sem A or Sem P.

3. An annual branch, i.e., one that is titled on a single line in the study plan, is examined as a whole during the summer session (E).

4. For the sessional branches, the written or oral form of the examination indicated for the session may be supplemented by written or oral tests of knowledge during the semester, as indicated by the instructor.

5. In the event of a first failure in an optional branch of mathematics that is not given the following year, the student may, in a second attempt, retake the subject for which the credits were not obtained in the following session. The teacher decides on the form of the examination.

Chapter 1: Preparatory Cycle

Art. 4 - Preliminary examination

1. The propaedeutic examination includes "Polytechnic" subjects with 37 coefficients and "Specific" subjects with 24 coefficients, distributed equally over two blocks.

2. The first block of branches corresponds to 41 coefficients and the second block of branches corresponds to 20 coefficients.
3. The propaedeutic examination is passed when:
- the student has obtained, at the end of the winter semester, a grade point average equal to or greater than 3.50 in the first block, which is a requirement for entry into the spring semester, and
- they have obtained, at the end of the summer session, an average of 4.00 or more in each of the two blocks, which is a condition for entry into the bachelor's program.

4. A student who fails the propaedeutic examination will not be allowed to repeat the following year the semester branches for which he/she has obtained a mark equal to or higher than 4.00.

Chapter 2: Bachelor's Degree

Art. 5 - Organization

1. The 120 credits to be obtained in the bachelor cycle are distributed as follows:
   - 56 in the mandatory and elective branches,
   - 44 in the optional branches,
   - in 12 the mathematical project,
   - in 8 in the humanities and social sciences.

2. Elective courses are to be chosen from the lists in the study plan.

3. The elective group can be completed by taking courses in the Master's elective group in mathematics or in the Bachelor's list 2. Among these credits, a maximum of 5 can be chosen from the list 2 bachelor.

4. A mathematics project is a semester-long course, the successful completion of which allows students to earn credits. It is placed under the responsibility of a teacher affiliated with the Mathematics Section.

Art. 6 - 2ème year examination

The 2-year block of courses is passed when the 56 credits of the required courses and one of the elective courses mentioned in the 2-year study plan are obtained. These courses remain as possible 3-year options.

Art. 7 - 3ème year examination

1. The group of electives is passed when 44 credits are earned independently by passing each individual elective.

2. The mathematics project group is passed when the credits 12 are obtained. The mathematics project can only be started after the credits of the 2nd year "Basic Sciences" block have been obtained.

Chapter 3: Master in Mathematics

Art. 9 - Organization

1. The 60 credits of the master cycle are distributed as follows:
   - 44 in elective courses
   - 10 in a semester project in mathematics
   - 6 in humanities and social sciences

2. With the prior approval of the Mathematics Section:
   - A maximum of 15 elective credits can be obtained by passing List 1 courses in the Bachelor of Mathematics cycle.
   - A maximum of 5 credits of the elective courses can be obtained by passing courses of the master cycle of another section of EPFL.

3. A mathematics project is a semester-long course, the successful completion of which allows students to acquire 10 credits. It is placed under the responsibility of a teacher affiliated with the Mathematics Section.

Art. 10 - Examination of the master cycle

1. The group of electives is successful when all 44 credits are earned independently through individual completion of each branch.

2. The group of semester branches "Projects" is passed when the credits 10 are obtained independently by passing each branch individually.

3. The "SHS" block is passed when the 6 credits are obtained.

Art. 11 - SHS Education

The two SHS branches are each worth 3 credits. The fall semester course introduces the spring semester project. The College of Humanities and Social Sciences may depart from this organization if it considers that the reason is justified. The College may also authorize a student to complete his/her project in a semester that does not immediately follow the semester in which the introductory course was given.
Chapter 4: Master in Mathematical Engineering

Art. 12 - Organization

1. The 90 credits of the master cycle are distributed as follows:
   - 44 in optional courses
   - 10 in a semester project in mathematics
   - 6 in humanities and social sciences
   - 30 credits for the engineering internship.

2. With the prior approval of the Mathematics Section:
   - A maximum of 10 credits of elective courses can be obtained by passing List 1 courses of the Bachelor's degree in mathematics.
   - 4 credits of the elective courses must be obtained by passing courses of the master cycle of another engineering section of EPFL. This requirement is waived in the case of an engineering minor.

3. The student must earn at least 30 credits from the 45 elective credits in List A.

4. The semester project and the master project must be done in applied mathematics.

5. A mathematics project is a semester-long course, the successful completion of which allows students to earn 10 credits. It is placed under the responsibility of a teacher affiliated with the Mathematics Section.

Art. 13 - Examination of the master cycle

1. The group of electives is successful when all 44 credits are earned independently through individual completion of each branch.

2. The group of semester branches "Project" is passed when 10 credits are obtained independently by individual success of each branch.

3. The "SHS" block is passed when the 6 credits are obtained.

Art. 14 - SHS Education

The two SHS branches are each worth 3 credits. The fall semester course introduces the spring semester project. The College of Humanities and Social Sciences may depart from this organization if it considers that the reason is justified. It may also authorize a student to carry out his or her project in a semester that does not immediately follow the semester in which the introductory teaching takes place.

Chapter 5: Minors

Art. 16 - Minors

1. In order to deepen a particular aspect of his or her training or to develop interfaces with other sections of the EPFL, the student who follows the Master of Mathematics is authorized to extend his or her Master's cycle by following the training offered in the framework of a minor included in the EPFL offer. Similarly, the student who follows the Master in Mathematical Engineering may choose to do a minor according to the conditions specified in art. 2 al.3.

2. The minor is regulated by the section offering it. After validation by the latter, the choice of courses is submitted to the Mathematics Section for approval. The minor "Mathematics" cannot be chosen.

3. A Mathematical Engineering student may only choose one minor in an engineering track.

4. The student announces the choice of a minor to his/her Section no later than the end of the first semester of the Master's degree.

5. A minor is successful when a minimum of 30 credits are earned from the endorsed branches.

Chapter 6: Specialization Teaching

Art. 17 - Specialization Teaching

1. The 4 to 6 month engineering internship must be completed after two semesters of the master's program and before the master's project.

2. The Section's internship supervisor evaluates the internship with a "pass" or "fail" rating. Successful completion of the internship is a condition for admission to the master project. If the internship is not successful, it can be repeated once, usually in another company.

3. The internship is validated by the acquisition of 30 credits.

4. The organization and the criteria for the success of the engineering internship are the subject of an internal directive of the Section.
1. Students in the Master of Mathematics program have the opportunity to specialize in mathematics for teaching.

2. A student admitted to this specialization may not take a minor. The study plan is modified as follows: (i) a new group of 30 ECTS of courses at HEP Vaud is added; (ii) the SHS courses are replaced by a course at HEP Vaud; (iii) the Master Project can be spread over two semesters and start after completing the "Projects" and "Elective Courses" groups; (iv) the total duration of the studies cannot exceed 8 semesters.

3. At least 50 ECTS must be obtained to start the specialization.

Art. 18 - Admission procedure

1. Admission to this specialization is not automatic. To be admitted to the specialization, the candidate must be enrolled in the Master's program in Mathematics at the EPFL and meet the conditions for admission to the Diploma of Teaching for Secondary II as set out in the Regulations for the application of the law on the HEP of June 3, 2009 (RLHEP).

2. He/she registers with the HEP Vaud according to the conditions and deadlines of the online application and sends the documents required by the RLHEP as well as a certificate of registration at the EPFL.

Chapter 7 Mobility

Art. 19 - Authorized periods of mobility

The students of the Mathematics Section can carry out a mobility stay in the 3rd year of their Bachelor's degree and/or in the framework of the Master's project.

Art. 20 - Conditions

1. For a mobility in the 3rd year of the Bachelor program, the student must have passed the propaedeutic exam with a minimum average of 4.5 and not be behind in the acquisition of the 60 credits of the 2nd year of the Bachelor program.

2. For a mobility to the master project, the student can be conditionally admitted if he/she has no more than 8 missing credits in the master cycle.

3. Specific conditions exist depending on the destination, and the agreement of the mobility delegate is necessary to go on a mobility stay.

On behalf of the EPFL management

The President, M. Vetterli
Academic Vice President, J. S. Hesthaven

Lausanne, May 26, 2021

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