

REGULATIONS FOR THE CONTROL OF THE STUDIES OF THE SECTION OF PHYSICS for the 202-2021 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 Physics section within the framework of the studies in Physics and Engineering Physics

stop:

Art. 1 - Scope of application

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

Art. 2 - Training stages

1. The bachelor's degree consists 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's degree in physics consists of two successive stages of training:
 - the three-semester Master's program, which requires the acquisition of 90 credits, including 30 credits for specialization work, a minor or Group IIa electives, which are required for the Master's project.
 - the master project, which lasts 17 weeks at EPFL or 25 weeks outside EPFL, and whose successful completion implies the acquisition of 30 credits. It is placed under the responsibility of a professor or a MER affiliated to the physics section.
3. The Master of Engineering Physics is composed of two successive stages of training:
 - the three-semester Master's program, which requires the acquisition of 90 credits, including 30 credits for an engineering internship lasting 4 to 6 months, a minor or Group IIb electives, which are required for the Master's project.

- the master project, which lasts 17 weeks at EPFL or 25 weeks outside EPFL, and whose successful completion implies the acquisition of 30 credits. It is placed under the responsibility of a professor or a MER affiliated to the Physics section.

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.

Chapter 1: Preparatory Cycle

Art. 4 - Preliminary examination

1. The propaedeutic exam includes "Polytechnic" branches for coefficients 46 and "Specific" branches for coefficients 14, distributed indifferently on two blocks.
2. The first block of branches corresponds to 44 coefficients and the second block of branches corresponds to 16 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

The courses in the two years of the Bachelor cycle are divided into four blocks, an "elective" group and a transversal SHS block.

Art. 6 - 2nd year examination

- 1 Block 1 is passed when the **38 credits** of the study plan are obtained.
- 2 Block 2 is passed when the **18 credits** of the study plan are obtained.

Art. 7 - 3rd year examination

- 1 Block 3 is passed when the **34 credits** of the study plan are obtained.
- 2 Block 4 is passed when the **16 credits** of the study plan are obtained.
- 3 The group of elective courses is passed when the **The elective group is passed when the 6 credits** of the study plan are obtained, by individual success in each branch.

Art. 8 - 2nd and 3rd year examination

Block 5 "SHS and cross-curricular MGT" is passed when the **8 credits** of the study plan are obtained.

Chapter 3: Master Cycle in Physics

Art. 9 - Organization

The 90 credits of the master cycle are distributed as follows:

- 16 in Physics I and II projects
- 6 in humanities and social sciences
- 38 in Group Ia options courses
- 30 credits in Master semester 3, choice of
 - Specialization work or
 - Group IIa or
 - Minor

Art. 10 - Physics projects

Physics I and II projects must be supervised by a teacher in the physics department.

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. 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.

Art. 12 - Group Ia: Options

- 1 Group Ia of "Elective Courses" is divided into:
 - SPH options: list of options in the study plan
 - 3rd year and master's level Mathematics (ADM), Chemistry and Chemical Engineering (CCCE) options and a list of SPH accredited courses
 - other faculties options: according to the catalog of 3rd year and master cycle courses of the EPFL engineering sections.

2a The student may select a maximum of 12 credits of courses from the ADM and CSEM sections as well as from the SPH accredited course list.

2b Of these 12 credits, 6 can be chosen from the SPH elective courses of the bachelor cycle

3 The student may choose a maximum of 6 credits in courses from other faculties, subject to the prior approval of the SPH section director.

Art. 13 - Group IIa - options

- 1 List of courses group Ia options SPH.
- 2 Master courses from other sections and/or Doctoral School (18 credits maximum, including 2 courses maximum from the Doctoral School)

Art. 14 - Minors

1 In order to deepen a particular aspect of his or her training or to develop interfaces with other EPFL sections, the student may choose to follow the training offered in the framework of a minor included in the EPFL offer.

2 The choice of courses that make up the minor is made with the minor leader. The "Physics" minor may not be selected.

3 The student announces the choice of a minor to his or her section no later than the end of the first semester of master's studies.

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

5 If the minor is dropped during the course of study, the physics section determines the number of validated credits to be transferred to the option group.

Art. 15 - Specialization work

- 1 The Specialization Work is done after two semesters of the master cycle but before the master project.
- 2 Two options are available to students:
 - i) The "External Specialization Work", lasting from 4 to 6 months, takes place in a public or semi-private research institute approved by the section.
 - ii) The "Internal Specialization Work" lasting one semester.
- 3 The "Specialization Work" is placed under the responsibility of a professor or a MER affiliated with the Physics section.
- 4 The "Specialization Work" is assessed as "passed" or "not passed". If it is successful, it is validated by obtaining 30 credits. If it is not successful, it may be repeated once.
- 5 The methods of organization and the criteria for validation of the Specialization Work are the subject of internal directives of the section.

Art. 16 - Examination of the master cycle in physics

- 1 Group I of "elective courses" is passed when **38 credits** are earned independently by successful completion of each elective.
- 2 Group IIa "Electives" is passed when **30 credits** are obtained independently by passing each branch individually.
- 3 The "Physics and SHS projects" block is passed when the **22 credits** of the study plan are obtained.

Art. 17 - Titles awarded

- 1 The Master's degree entitles the holder to the title of Physicist when it corresponds to one of the three following tracks:
 - completion of 120 credits (60 credits of the master's program, 30 credits of Specialization Work (art. 15) and 30 credits of a 17 or 25 week master's project) or
 - completion of 120 credits (60 credits from the master's program, 30 credits from a minor (art. 14) and 30 credits from a 17-week or 25-week master's project
 or
 - Obtaining 120 credits (60 credits from the master cycle, 30 credits from group IIa "options", a 17-week master project in an EPFL laboratory or 25 weeks outside EPFL.

Chapter 4: Master's Degree in Engineering Physics

Art. 18 - Organization

The 90 credits of the master cycle are distributed as follows:

- 16 in Physics I and II projects
- 6 in humanities and social sciences
- 38 in Group I options courses
- 30 credits in Master semester 3, choice of
 - Engineering internship or
 - Group IIb options courses or
 - Minor.

Art. 19 - Physics Project

Physics I and II projects must be supervised by a teacher in the physics department.

Art 20- 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 took place.

Art 21- Options

- 1 The group of elective courses is composed of the "Engineering elective courses" group and the "Physics elective courses" group. The "Engineering elective courses" group includes the professional courses of the Engineering Physics track.
- 2 Group I "Elective Courses" are divided into:
 - SPH Ib options: list of options in the study plan
 - 3rd year and master's level Mathematics (ADM), Chemistry and Chemical Engineering (CCCE) options and a list of SPH accredited courses
 - other faculties options: according to the catalog of 3rd year and master cycle courses of the EPFL engineering sections.
- 3a The student may select a maximum of 12 credits of courses from the ADM and CSEM sections as well as from the SPH accredited list of courses. 4 credits from the accredited list may count toward engineering options
- 3b Among these 12 credits, 6 can be chosen from the SPH options of the bachelor cycle
- 4 The student may choose a maximum of 6 credits in courses from other faculties, subject to the prior approval of the SPH section director.

Art. 22 - Group IIb - options

- 1 List of courses group Ib SPH options
- 2 Engineering courses in other sections: maximum 18 credits from the list of accredited courses

Art. 23 - Minors

- 1 In order to deepen a particular aspect of his or her training or to develop interfaces with other EPFL sections, the student may choose to follow the training offered in the framework of a minor included in the EPFL offer.
- 2 The choice of courses that comprise it is made with the physics section and with the minor's chair. The "Physics" minor may not be selected.
- 3 The student announces the choice of a minor to his or her section no later than the end of the first semester of master's studies.
- 4 A minor is successful when a minimum of 30 credits are earned from the endorsed branches.
- 5 Students who choose to complete their master's degree with a minor are required to complete a 25-week master's project in a company.
- 6 If the minor is dropped during the course of study, the physics section determines the number of validated credits to be transferred to the option group.

Art. 24 - Engineering internship

- 1 An engineering internship of 4 to 6 months is required to obtain the title of Engineer Physicist (see art. 17). The completion of a 25-week master project in a company exempts students from this obligation.
- 2 This internship must be completed after two semesters of the master's program but before the master's project.
- 3 The section's internship supervisor evaluates the internship with the assessment "successful" or "unsuccessful". If the internship is not successful, it can be repeated once, usually in another company.
- 4 The internship is validated by obtaining 30 credits of the master cycle in engineering physics.
- 5 The organization and validation criteria of the compulsory internship are the subject of internal directives of the section.

Art. 25 - Examination of the Master's Degree in Engineering Physics

- 1 Group I of electives is passed when **38 credits** are earned independently through individual completion of each branch. At least **19 credits** must be earned in the "Engineering Elective" group.
- 2 Group IIb "Electives" is passed when **30 credits** are obtained independently by passing each branch individually.
- 3 The "Physics and SHS projects" block is passed when the **22 credits** of the study plan are obtained.

Art. 26 - Titles awarded

The Master's degree entitles the holder to the title of Engineer Physicist by respecting one of the three following paths:

- completion of 120 credits (60 credits from the master's program + 30 credits from a minor approved by the section + 30 credits from a 25-week master's project in a company) or
- Obtaining 120 credits (60 credits from the master's program + 30 credits from the internship + 30 credits from a 17 or 25 week master's project) or
- Obtaining 120 credits (60 credits of the master cycle, 30 credits of group IIb "options", a 25-week master project in a company).

Chapter 5: Mobility

Art. 27 - Authorized periods of mobility

The students of the physics section can carry out a mobility stay in the 3rd year of their bachelor's degree and/or within the framework of the master's project.

Art. 28 - 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, 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

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