Regulations of the doctoral program in Mechanics

Doctorate cursus

The doctoral cursus is divided into 2 phases.
The preparatory phase includes a program of doctoral courses and an exploration of the thesis subject and is sanctioned by a candidacy examination after about 9 months (between 6 to 15 months) from the date of your enrolment.
The productory phase covers the effective original research, its publication and ends with the thesis defence.
In complement, every doctoral student is expected and often requested to function as teaching assistant in several undergraduate or graduate courses.

EDME Credits Required for Graduation as of August 1, 2010

- 4 EDME credits
- 8 others / doctoral or master level credits

Course program

In the doctoral program in mechanics, you will have to obtain a minimum of 12 credits during your cursus out of which:

- At least 4 credits out of 12 must be obtained from doctoral courses offered by the doctoral program in mechanics. The remaining 8 credits may be chosen among master and doctoral courses in EPFL graduate and other doctoral programs, or external courses upon agreement and with due recognition by the EDME program director.
- The allowed credits coming from master courses are limited to 4 (additional Master level course credits may be attained, upon authorization).
- At least 4 credits must be passed during your first year, before the qualifying examination;
- Eight credits must be chosen in agreement with the thesis director, while the other four may be at the choice of the doctoral candidate.
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Thesis preparation

Your thesis director will assist you in preparing for the research and exploration of your subject. By the end of your first year, you will need to have a research proposal which outlines your research background, methods and goals, and is approved by your thesis director and the doctoral program director.

The initiation to the research and exploration of your subject will be provided by your thesis director.

Candidacy examination

After 9 months but within one year of your enrolment, you will have to:

- show that you passed at least 4 credits, preferably 6 or 8, out of the 12 requested;
- present your thesis subject and defend your research plan in front of an Examination Committee composed of a president (from the program committee, preferable your mentor), two experts (at least one external to the laboratory), your thesis director and your co-director (if applicable).

The thesis director will agree on a date for the candidacy exam with the candidate, jury members and the director of the doctoral program. The candidate submits a first version of his/her research plan to the thesis director no less than 15 working days prior to the date of the exam as the program’s director has to give his approval prior to the exam.

In order to be confirmed in your status of doctoral student and be qualified to prepare your thesis, you have to

a) have the agreement of a qualified person to direct your thesis (your "thesis director"),
b) pass the candidacy exam,
c) have your research plan approved and signed by your thesis director and the program director,
d) have attained at least 4 ECTS credits. You will then receive a letter from the Dean of the Doctoral School confirming your definitive admission.

If you happen to fail the candidacy exam, you will have a second opportunity to take it within 15 month from your official immatriculation date. If you fail this second attempt, you will be excluded from the program.
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Specifics

Exam format

The candidacy exam includes an oral presentation by the candidate of his/her research proposal and is followed by questions from the jury members. The presentation will last approximately 30 minutes and will be conducted in front of a specially convened jury. Members of the EPFL teaching body may attend the exam. They are required to respect the confidential nature of the exam and will not be permitted to ask questions of the candidate.

The jury president ensures the fair and good conduct of the candidacy exam. The composition of the jury is subject to the approval of the director of the doctoral program. At least one expert will not be a member of the same research unit (chair or laboratory) as the thesis director.

The presentation will consist primarily of an exposé of the candidate's thesis project, including:

- the general context of the thesis subject
- the state of the art of research in the area
- the position of the candidate's work within the research area
- the plan and research methodology of the thesis project
- the timeframe for the research work

During the presentation, the candidate will demonstrate the originality of his/her thesis subject, the objectives and methods envisaged, as well as the hypothesis and the related scientific arguments.

Evaluation criteria

The jury evaluates the candidate's presentation on the base of the following principle criteria:

- the pertinence and originality of the thesis subject
- the quality of scientific argument
- the scientific value of the candidate
- the candidate's ability to conduct research
- the clarity and rigor of the research plan
- the candidate's responses to the jury's questions

After the presentation, the jury deliberates in the absence of the candidate. The jury will decide whether the candidate has passed or failed the address, and may provide recommendations to the candidate. The final decision is taken by a majority after its deliberation. If the jury cannot come to a majority decision, the thesis director will decide the success or failure of the candidacy exam. The jury will decide, where applicable, the conditions to be fulfilled by the candidate in re-taking the exam and will fix the time schedule.
The request for the candidacy exam contains the following elements:

- the name of the candidate
- the subject of the thesis
- the list of doctoral courses taken by the candidate
- the composition of the exam jury
- the date, location, and time of the candidacy exam

Possibility to re-take the exam

In case of failure of the candidacy exam, the program secretariat will provide a date to the candidate for a second and final attempt. This date will be within three months of the first candidacy exam. In principle, the format and the jury members of the second candidacy exam will be the same as those for the first.

Record of the exam

The jury president will write an official record of the candidacy exam and forward this record to the secretariat of the doctoral program, for the attention of the director of the doctoral program, within one week of the exam.

The official record of the candidacy exam will contain the following information:

- the name of the candidate
- the academic qualifications of the candidate
- the thesis subject
- the location of the thesis work (the EPFL unit or external site)
- the name of the thesis director
- the place and date of the candidacy exam
- the evaluation of the candidacy exam according to the criteria set out above and, where applicable, the rationale for failure
- the result of the candidacy exam
- the name, affiliation, and signatures of the jury members

The official record may contain, when applicable, an appendix for the candidate's attention which includes the jury's recommendations.

Communication of the result

The candidacy exam’s jury president verbally informs the candidate of the result of the candidacy exam immediately thereafter.
Thesis writing

After about 3 years after your admission (but maximum 6 years since being at EPFL), your thesis report (one copy for each member of the jury and one copy for the doctoral student’s file) must be submitted to the registrar’s office (service académique) at least 35 days before the date of your thesis defence examination, and before 12 p.m. noon.

Thesis defence examination

The Jury should be composed of 5 to 6 members;

- a president: A member of the EDME Committee (preferably your mentor),
- your thesis director and your co-director (if applicable),
- two external examiners (non-EPFL, typically from a European university),
- one internal examiner (EPFL),
- optionally, another internal expert.

The Date of your thesis defence examination should be:

- between 3 to 4 years after your admission (registration)
- 1.5 months after the official submission of your thesis report.

Normally, your thesis will be accepted. If it happens to be refused, you will have another 6 months to resubmit it.

Thesis public presentation

Finally, you will organize a public presentation of your thesis (a less specialized and more accessible version of your exam presentation) about one month after your examination, at the end of which, you will receive your doctorate and can celebrate it!

Entry into force

The regulations detailed above entered into force on July 11th, 2011.

For the doctoral program in Mechanics
Professor Lyesse Laloui, Program Director

Approved by the Dean of the Doctoral School
Professor Jacques Giovanola