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Master Thesis (PDM)

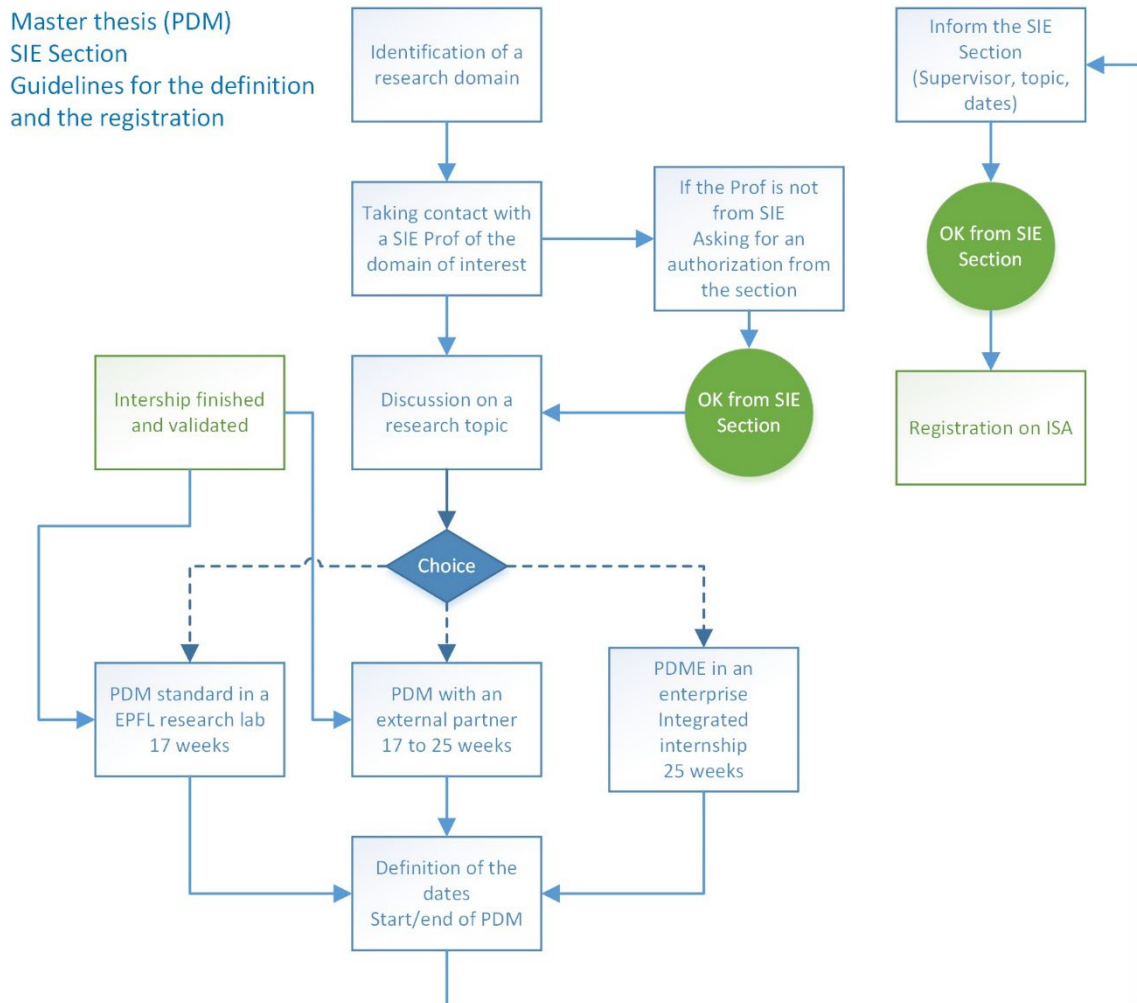
Guidelines of the SIE Section

Version 1.5

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1. SHORT GUIDELINES



Guidelines for the definition and the registration of a PDM. We ask you to follow the sequence of the different steps. The contact with an SSIE faculty is essential because he/she will take the academic responsibility for the supervision of your PDM. If it's a PDME or with an external partner, contact between the SSIE faculty and the external partner is mandatory in order to clearly define the expectations and responsibilities. In this case (PDME, PDM with partner), the academic responsibility **must be** taken by a [professor or MER affiliated with SSIE](#).

2. INTRODUCTION

2.1 Context

This document is intended for students, EPFL faculty and companies/universities that host students for their Master Thesis (Projet de Master, PDM). It clarifies the organizational arrangements for the PDM in accordance with the « *Ordonnance sur le contrôle des études menant au bachelor et au Master à l'École polytechnique fédérale de Lausanne* » (*Ordonnance sur le contrôle des études à l'EPFL ; 414.132.2, chapitre 4*)¹

The Master Thesis is a personal achievement of the student that involves analysis, design and implementation aimed at proving his/her engineering abilities (in the broadest sense). It can be carried out in an EPFL laboratory, an institution related to EPFL, or an external company. The Master Thesis takes place on the dates mentioned in the academic calendar. However, it may begin in the course of a reference semester. For instance, if related to

¹ <https://www.epfl.ch/about/overview/regulations-and-guidelines/polylex-en/>

the spring semester, a Master Thesis must begin between 1st January and 31st May. If related to the fall semester, it must begin between 1st June and 31st December.

2.2 Type of Master Theses

Different types of Master Theses are proposed with the following rules (duration, agreement, and supervision).

| Type | Context | Length [weeks] | Internship | Supervision | Agreement |
|------------------------------------|--------------------------------------|----------------|------------|--|--------------|
| Standard | Within an IIE Lab | 17 | Before PDM | 1 SIE prof. | Not required |
| With external collaboration | Between external partner and IIE Lab | 17 – 25 | Avant PDM | 1 SIE prof. + 1 external supervisor (optional) | Recommended |
| PDME | Within a company | 25 | Integrated | 1 SIE prof. + 1 supervisor from the company | Mandatory |

3. SELECTION AND SUPERVISION

Whatever the type of PDM, the project **must be academically supervised by a faculty member** affiliated with the SSIE or another section in EPFL (pending on SSIE's approval). He/she is then responsible for monitoring the PDM and its evaluation. If the project takes place in an external institution, the external partner supervises on a daily/weekly basis the student's work and this person will be the main contact of the academic supervisor.

3.1 Step-by-step procedure for the student

The student is free to choose his own academic supervisor who has to agree to take the related responsibility. However, if this person is not affiliated to the SIE Section, the student must apply to the Section for approval (see Figure, section1).

The Master Thesis topic can be proposed by:

- A laboratory of the Institute of Environmental Engineering (IIE)
 - Each lab has a page dedicated to projects and all these pages are listed on the SSIE website.
- The student in an environmental engineering field via an external institution. Before defining a topic with an external partner, **the student must first contact an academic supervisor** who will be able to give advice from the beginning and then supervise the work.

Then, the approach implies that: (see summary diagram in chap. 1)

- In all cases, the student discusses the topic and objectives of the Master Thesis with the academic supervisor who must validate them.
- In the case of Master Thesis with an external partner, the academic supervisor must, in addition to the subject and objectives of the Master Thesis, validate the host institution and the external supervisor.
- The student then informs SSIE of his/her choice of topic and supervisor.
- In the case of a Master Thesis carried out in a company, a standard agreement, provided by SSIE, must be signed between the parties (EPFL supervisor, company, student). The signature of this agreement is optional for a Master Thesis carried out at EPFL in collaboration with an external partner, but it is recommended that the essential points (intellectual property, confidentiality) are discussed with the partner before starting the project.
- **With the SSIE approval**, he or she can officially register the Master Thesis on IS-Academia.
- It is important that the dates are correctly validated because once the registration is made, they can only be changed for good reasons.

Any registration made without the SSIE approval will be invalidated.

Throughout the duration of their Master Thesis and until the grade is registered on IS-Academia, students remain registered as EPFL students and are subject to the rules of the host laboratory or company: timetable, absence, confidentiality, seminars, etc.

3.2 Academic supervisor

SSIE affiliated faculty regularly propose Master Thesis topics.

The academic supervisor:

- Proposes topics (or project teasers) in his/her field of research and publish them on the laboratory's website.
- Defines the objectives of the Master Thesis with the student interested in a topic.
- Informs the students who wishes to do their Master Thesis with an external partner, giving them advance notice to define the topic and the mode of collaboration.
- Revises the external Master Thesis proposal by verifying the academic component of the topic proposed by the external partner.
- Instructs the external partner on the requirements needed by EPFL (if necessary, sign an agreement).
- Discusses the confidentiality issues of the Master Thesis and ensures that the clause is included on IS-Academia (see Section 6.3)
- Formally supervises the Master Thesis by regularly monitoring the progress of the work.
- Requests an interim report/presentation in order to evaluate the student's abilities and the directions taken by the project; intervenes in a timely manner with the external hosting partner in case of problems.
- Reserves the right to redirect the work in agreement with the external supervisor in order to ensure the academic dimension of the Master Thesis.
- Designates an external to EPFL expert for the evaluation of the Master Thesis.
- Organizes the Master Thesis examination.
- Chairs the jury during the Master Thesis examination.
- Completes the PDM evaluation form and send a copy to SIE Section.
- Records the grade on the ISA.

3.3 External partner

The external supervisor has to:

- Welcome the student at the beginning (day one) of the Master Thesis and inform him/her about guidelines and rules of the external institution.
- Propose a working environment suitable for the realization of the PDM in the best conditions.
- Supervise regularly the student and give advice for his/her work progress.
- Communicate as soon as possible with the academic supervisor in case of problems.

4. ORGANISATION

4.1 Duration

Reminder: the Master Thesis must take place within a period of two semesters after the successful end of the Master cycle (included internship). It is not recommended to insert a free semester right after the end of the Master cycle because only one Master Thesis tentative will be possible then.

The duration of the Master Thesis is 17 weeks if it takes place at EPFL under the supervision of an internal faculty. The duration could be extended up to 25 weeks in the following cases:

- The project takes place in another institution (not at EPFL),
- The request must be addressed to SSIE before the start of the Master Thesis,
- SSIE agrees on the specific conditions.

The requests for an extension during the Master Thesis will not be considered, with the exception of situations justified towards the SAC (Academic Service), e.g. illness.

One additional week is inserted as vacation in the period of the Master thesis.

4.2 Expenses

Expenses incurred for the implementation of the Master project (chemicals, laboratory analyses, software licenses, travel, conferences) have to be charged to the responsible institution/laboratory.

5. WRITING A REPORT

The Master Thesis report is the official document written by the candidate. The academic supervisor and the external expert will receive a copy of the report. The report should contain the following information:

- the title and EPFL logo
- the name of the student
- the name of the EPFL or host laboratory with the logo
- the name of the academic supervisor
- the name of the supervising partner at the host institution
- a summary of the work in English and in French
- 5 to 8 keywords that characterize the project

This report shall be representative of the work conducted and shall be used to evaluate the student's engineering capabilities.

The Master Thesis report belongs to the student, including the related IP unless a dedicated agreement has been signed a priori with the hosting laboratory or partner.

The section encourages the student, in agreement with his or her supervisor, to valorize the results of the PDM in the form of a technical/scientific article or a communication. The Section also proposes that the Master's thesis be published on the EPFL Infoscience archive, with the author's agreement.

6. END OF THE MASTER THESIS

6.1 For the student

The student sends an electronic version in PDF format by email to christina.treier@epfl.ch, to the academic supervisor and to the expert **within the deadline set until 12:00** (Swiss local time). Any project submitted after the deadline will lead to an N/A assessment. The PDF document is simultaneously uploaded to IS Academia in the Master Thesis portal, except if the work is considered confidential. Please note that when the PDF must be uploaded on IS-Academia, and that the document is automatically analyzed for plagiarism. Please note that the maximum size for this analysis is 20 MB. Make sure you reduce the size of your PDF for this analysis.

If required by the academic supervisor and the expert, the student prints and binds a hard copy and sends it to them (no paper version required for SSIE).

For the oral examination, the student prepares a presentation of the Master Thesis. As an indication, the examination lasts about one hour, about half of it dedicated to the presentation and half to a Q&A session.

6.2 Academic supervisor

- He or she evaluates the work together with the external expert with regards to: a) work quality, b) report quality, c) quality of the oral presentation
- He or she inserts the grade directly into the ISA platform, after the oral defense if the exam is passed. He or she completes the evaluation form and send a copy to the Section.
- In case of failure, a new Master Thesis must be presented the following semester.
- SSIE recommends that the jury notifies the candidate of the strengths and weaknesses of the work, in particular in case of failure.

6.3 Confidentiality

In the course of conducting the Master Thesis, some of the data used, as well as some results, may appear confidential. In this case, SSIE should be informed, and if necessary, a confidentiality contract be drawn up between the different parties. The student must then indicate on IS-Academia whether or not his/her subject is confidential, which is validated by the academic supervisor. With such a status, the Master Thesis report can be classified as "confidential" and the parties involved commit themselves to respecting this clause.

This confidentiality clause **must remain exceptional** because EPFL encourages open and non-confidential scientific publications. It is not a unilateral decision, especially coming from the external partner.