

SECTION DES SCIENCES ET INGÉNIERIE DE L'ENVIRONNEMENT (SIE)
Faculté de l'environnement naturel, architectural et construit (ENAC)



EPFL-ENAC-SSIE
Bât. GR
Station 2
CH 1015 Lausanne

Téléphone : +41 21 693 80 71
E-mail : secretariat.ssie@epfl.ch
Site web : <http://ssie.epfl.ch/>

Master thesis (PDM)

Guidelines of the SIE section

Version 1.1

Versioning

Version	Date	Autor	Description	Status
1.0	27.08.2018	PY GILLIERON	New version	Public
1.1	22.08.2019	PY Gilliéron	Review	Public.
1.x		PY Gilliéron	--	.

1. INTRODUCTION

1.1 Context

This document is intended for students, EPFL professors and companies/universities that host students for their master's degree project (PDM). It specifies the organisational 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 PDM is a personal achievement that involves different steps of work based on analysis, design and implementation phases aimed at proving his engineering skills. It can be carried out in an EPFL laboratory, a research unit in contact with EPFL or an external company. The PDM takes place on the dates mentioned in the academic calendar.

1.2 Types of PDM

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

Type	Contexte	Durée [sem.]	Stage	Supervision	Convention
Standard	Dans un labo affilié à SIE	17	Avant PDM	1 prof. SIE	Pas nécessaire
Standard avec coll. externe	Entre un partenaire externe et labo SIE	17 – 25	Avant PDM	1 prof. SIE + 1 encadrant externe (optionnel)	Recommandée
PDME	En entreprise	25	Intégré	1 prof. SIE + 1 encadrant de l'entreprise	Obligatoire

2. SELECTION AND SUPERVISION

Whatever the type of PDM, the project **must be supervised by a faculty member** who is a professor or MER in the SIE section. 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 the student's work and he will be the main contact of the academic supervisor.

2.1 Step by step for the student

The student is free to choose his own academic supervisor who has to agree to take the responsibility.

The topic for the master project can be proposed by:

- a lab from the Environmental Engineering Institute (IIE)

¹ <https://polylex.epfl.ch/etudes>

- the student in an environmental engineering field in collaboration with an external institute or company. Before defining a subject with an external partner, **the student must first contact an academic representative** who could advise him/her from the beginning, and then supervise his/her work

Then, the next steps are :

- In all types of PDM, the student is discussing the topic and the objectives with the academic representative who should validate them.
- PDM with an external partner: the academic representative should confirm the collaboration with the external partner and its representative, as well as the topic and the objectives.
- Then, the student informs the SIE section of his PDM topic and its supervision.
- PDM within an external institution (PDME) : an agreement, provided by the section, must be signed by the parties (EPFL supervisor, external institute/company, student). Signing this agreement is optional for a PDM with an external partner, but it is recommended that the essential points (intellectual property, confidentiality) to be discussed with the partner before starting the research.
- With the OK of the section, the student can officially register for the PDM on ISA.

Throughout the duration of their master project and until the PDM 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.

2.2 Responsable académique

The teachers of the section should propose PDM topics on a regular basis.

The academic representative should:

- Propose research topics in his/her field and publish them on the ISA platform and/or on the Web pages of the lab.
- Define the objectives of the PDM with the student who expressed an interest
- Inform the student who would like to do his/her PDM with an external partner about the project definition and the way of collaboration.
 - o Then he has to evaluate the external PDM proposal with a verification of the academic part proposed by the partner
 - o And he has to validate the topic and to agree on being in charge of the academic supervision
 - o He has also to inform the external partner on the EPFL requirements for the PDM (e.g. to sign an agreement).
- Discuss the issue of the confidentiality. It must be compatible with the specification on ISA (*clause de confidentialité*).
- Official supervision of the PDM and monitoring of the work progress
 - o In order to evaluate the capacity of the student and the orientation of the project, he can ask the student for a mid-term report or oral presentation
- Discuss on time with the external partner in case of problems
 - o The EPFL supervisor can re-organize the research work in coordination with the external partner in order to ensure the academic dimension of the PDM.
- Propose an external expert (not from EPFL) with the agreement of the section director.
- Organise the PDM exam
- Chair the jury during the PDM exam.

It should be reminded that the academic supervisor is a professor/MER attached to the SIE section. In specific cases and with the agreement of the SIE Section Director, the academic supervisor may be a professor/MER from another EPFL section or a scientific collaborator.

2.3 External partner

The external supervisor has to :

- Welcome the student in the beginning (day one) of the PDM and to give him/her the 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 to give advice for his/her work progress

- Inform the academic supervisor on the work progress and to communicate as fast as possible in case of problem

3. ORGANISATION

3.1 Duration

Reminder : the PDM must take place during the 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 PDM tentative will be possible in this period.

The duration of the PDM is 17 weeks if it take place at EPFL under the supervision of an internal professor or MER. The duration could be extended up to 25 weeks in case of:

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

The requests for an extension during the PDM will not be considered.

One additional week is inserted if the period of the PDM includes Christmas or Easter time.

3.2 Expenses

Expenses incurred for the implementation of the master project (chemicals, analyzations, software, travel, conferences) are to be charged to the responsible institution/laboratory.

At the beginning of each semester, the SIE section allocates a compensation of CHF 250-300.- per student to the academic representative for each master project they supervise.

4. WRITING A REPORT

The PDM report is the official document written by the candidate. The academic supervisor and the external expert will receive a copy of the report. The content of the report is structured as follow:

- the title
- the name of the student
- the name of the EPFL or host laboratory with the logo
- the name of the academic representative
- the name of the representative at the host institution
- the work results with a summary in English and in French
- 5 to 8 key words that characterize the project

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

The content of the PDM and the report belong to the student and the section offers the possibility to value these results by publishing them on the SIE web page and/or in the EPFL Infoscience publications directory. Such a publication must be made with the agreement of the student.

The section encourages the student, in agreement with his or her supervisor, to value the results of the PDM in the form of a technical/scientific article or a communication.

5. END OF THE PDM

5.1 For the student

The student sends an electronic version in PDF format by email to christina.treier@epfl.ch, to the academic leader and to the expert within the deadline set until 12:00 (local project time). Any project submitted after the deadline will give the NA assessment ("non acquis"). The PDF document is simultaneously uploaded to IS Academia in the PDM portal, except if the work is considered confidential. Note that when the PDF is uploaded to IS-Academia, the document is automatically submitted to a tool for the plagiarism rate.

If required by the academic supervisor and the expert, the student prints and binds a hard copy and sends it to these 2 people (no paper version required for the Section).

For the oral examination, the student prepares a presentation of his master's project. The examination lasts about one hour: presentation of the student (20 to 30 minutes maximum), questions from the jury (25 minutes), deliberation (5 minutes).

5.2 Academic supervisor

- He evaluates the work together with the external expert with regards to: a) work quality, b) report
 - quality, c) quality of the oral presentation
- he is filling the PDM evaluation protocol (available on the SIE website).
- In case of a successful exam, he directly communicates the grade to SAC or uploads it on ISA platform
- If the project work is evaluated to be insufficient, the academic representative can ask the student to submit an improved version within two weeks, starting from the date of the oral presentation.
- In the case of failure, a new master project must be performed the following semester.

5.3 Confidentiality

During the PDM, some of the data used, as well as the results, may be confidential. In this case, the host unit must inform the SIE section, and if necessary, it may request that a confidentiality agreement could be set up between the different parties. Then, the student must indicate on IS-Academia if his subject is confidential or not, which is validated by the academic supervisor. With such a status, the report of the PDM can be classified as "confidential" and the parties concerned undertake to respect this clause.