

SIE – MASTER THESES & INTERNSHIPS

Meeting: 18 November 2025

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SIE Section

Agenda

- **Master Thesis (PDM)**

- Context
- How to proceed
- Types of PDM, timeline
- Research topics

- **Internship**

- Goals, directive
- Where and how long
- How to proceed
- Agreement, ISA status

- **Questions**





Master Thesis (PDM)

A unique opportunity to take
on an academic challenge

Master Thesis (PDM) - Context

- Conditions



- To succeed in the Master cycle (90 cr.)
- To have achieved the internship (except for PDME)
- The duration of the PDM is one full semester (30 credits)
- The PDM must be **achieved within 1 year** right after the end of the Master cycle
- Conditional admission: not more than **8 missing credits**
 - Must be an exception

EPFL Directives:

- Education (414.132.3)
- «Contrôle des études» (414.132.2)
- <https://www.epfl.ch/education/studies/reglement-et-procedure/pdm/>

Master Thesis (PDM) - Context

- Fundamental principles

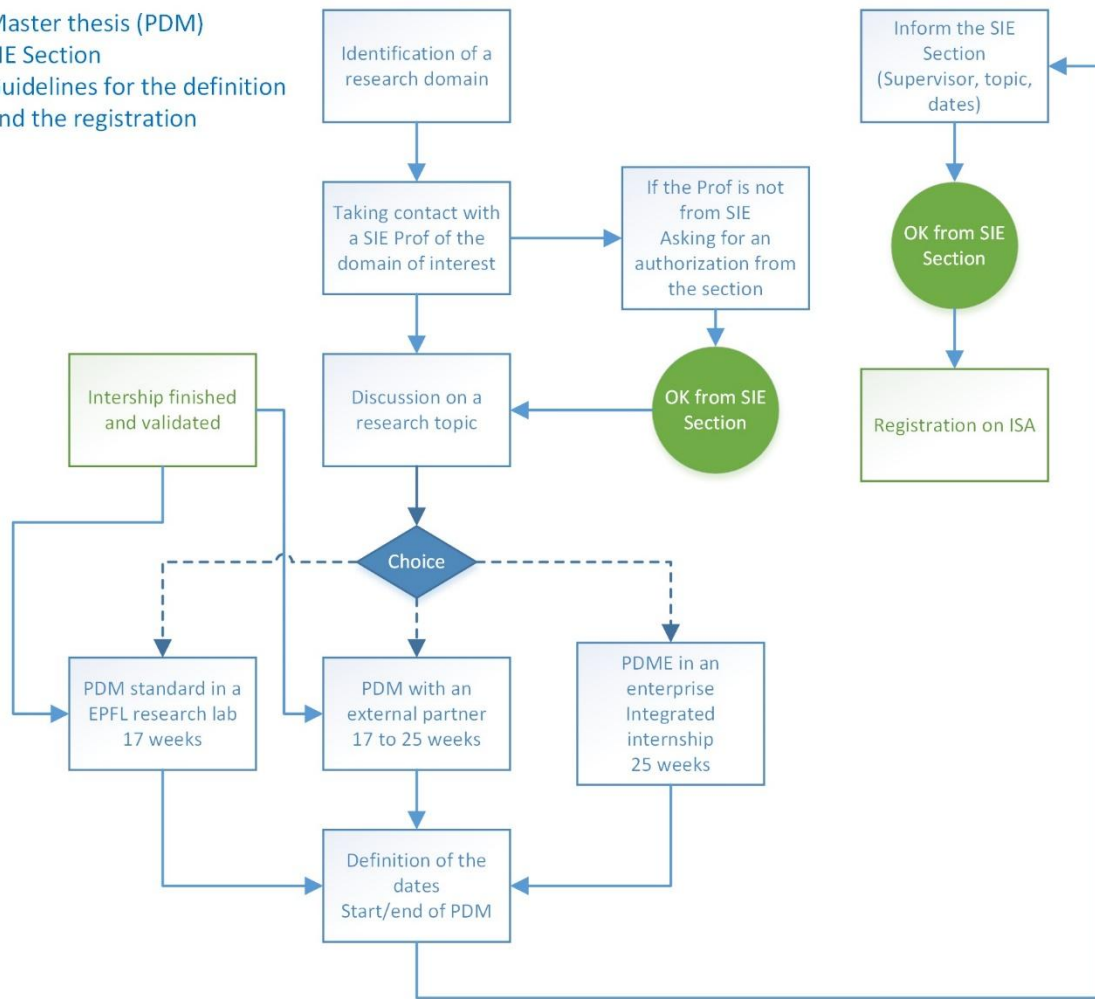
- The PDM is a research academic work
- The topic must be discussed and accepted by a SIE professor (or MER), as well as the Section Head
- The Prof or MER is in charge of the main supervision of the PDM
- The assessment of the PDM is done during an oral exam led by a professor (main supervisor) and an expert.

The PDM offers a unique opportunity to organise your own research project completely independently.

How to proceed?

Guidelines on SIE
web pages,
and Moodle pages
<https://moodle.epfl.ch/course/view.php?id=18315>

Master thesis (PDM)
SIE Section
Guidelines for the definition
and the registration



Master Thesis (PDM) - How to proceed

- PDM standard (SIE Lab)
 - Identify your own research interests
 - Search for internal competences (academic supervision)
 - Discuss with professors of the research domain
 - Optional: search for an external partner
 - Define the research topic
 - Title; goals; content, methodology
 - Define the supervision (Prof + co-supervisor)
 - Communicate your choice to the Section
 - Then the Section **will give the green light**
 - Register your PDM on ISA
 - Deadline: same as for courses (two weeks after the semester start)
Even if the starting date of your PDM is later



Master Thesis (PDM) - How to proceed

- PDM in the industry (PDME)
 - No initiative with an external partner without a preliminary discussion with an SIE Professor
 - The Professor must contact the external partner
 - Discussion on the conditions for a PDME
 - Role of the company and the external supervisor
 - PDME agreement (EPFL- Company - Student)
 - Hosting by the company, mode of supervision
 - Confidentiality: data/documents from the company, PDM report
 - Intellectual property

Are you interested in a PDME? Please ask the Section

Master Thesis (PDM)- How to proceed

- PDM in the industry (PDME)
- Types of partners: OK
 - Engineering comp., consultant
 - Public Administrations and institutions
 - Industry, start-up
 - EPF Research Institutes : EAWAG, WSL, PSI, EMPA
 - Mandatory agreement of the Section
- Types of partners: NON OK
 - Foundation
 - Non-profit association

Master Thesis (PDM) - How to proceed

- Standard PDM with an external partner
 - Internship (STAP) done and validated on ISA
 - Duration: from 17 to 25 weeks
 - Agreement is not mandatory; to be clarified with the Section
- PDME: PDM within a company
 - The internship is included
 - Duration: 25 weeks
 - Agreement is mandatory

Master Thesis (PDM) - Summary

Type	Context	Duration [weeks]	Internship	Supervision	Agreement
Standard	Hosted by an SIE research lab	17	Before the PDM	1 SIE prof.	Not required
Standard with an external partner	Lab + external partner	17 – 25	Before the PDM	1 SIE prof.+ 1 external supervisor (option)	Recommended
PDME	With the industry	25	Integrated	1 SIE prof.+ 1 external supervisor from the company	Mandatory

<https://www.epfl.ch/schools/enac/education/environmental-sciences-and-engineering/fr/sie-bienvenue/formation/master/projet-de-master/>

Master Thesis (PDM) - Timeline

- Timeline

- ISA Platform

- You have to register on ISA at the latest two weeks after the start of the semester (like any other type of course)
 - Even if your PDM starts later during the semester

- Start/end : flexible dates

- Spring semester: between 1st January and 31st May
 - Fall semester: between 1st June and 31st December
 - Start on Monday and end on Friday at 12:00 (Swiss time)
 - Please validate your dates with the Section, before ISA registration
 - Once the dates are scheduled, no possibility to change them anymore

- See: <https://www.epfl.ch/education/studies/reglement-et-procedure/pdm>

Master Thesis (PDM) - Research

- Research topics

- Sources of inspiration

- IIE Institut (Environment)
 - Some research labs in civil engineering
 - ETH Research Institutes (EAWAG, WSL, PSI, EMPA)

- Visit IIE web pages

- ...express your interest for some research fields

- ...get in touch

<https://www.epfl.ch/schools/enac/research/environmental-engineering-institute-iie/>



Internships

Immersion in the
professional world

Internships

- Principle
 - The internship is part of the EPFL Master programs
 - It can be done: after the end of the Bachelor, during the master cycle or right before the master thesis
 - It must be achieved before starting the master thesis
- Goals
 - immersion in the professional world
 - Working in teams
 - Be aware of the work organization of a company
 - Be exposed to the requirements of engineering projects

Internships

- Duration: min 8 weeks – max 6 months

- *Règlement d'études SIE (only in French)*

*Les étudiant·e·s doivent effectuer un stage d'ingénieur d'une durée **minimale de 8 semaines et maximale de 6 mois** entre la fin du cycle Bachelor et le début du projet de Master. La réalisation d'un projet de Master de 25 semaines en entreprise dispense cependant les étudiant·e·s de cette obligation.*

SIE web pages:

<https://www.epfl.ch/schools/enac/education/fr/sciences-et-ingenierie-de-lenvironnement/master-sie-fr/stage-dingenieur/>

Internships

- Companies: OK

- Engineering comp., consultant
- Public Administrations and institutions
- Industry, start-up
- EPF Research Institutes : EAWAG, WSL, PSI, EMPA
 - A practical work of the internship is required and if possible a collaboration with external partners
 - Mandatory agreement of the Section

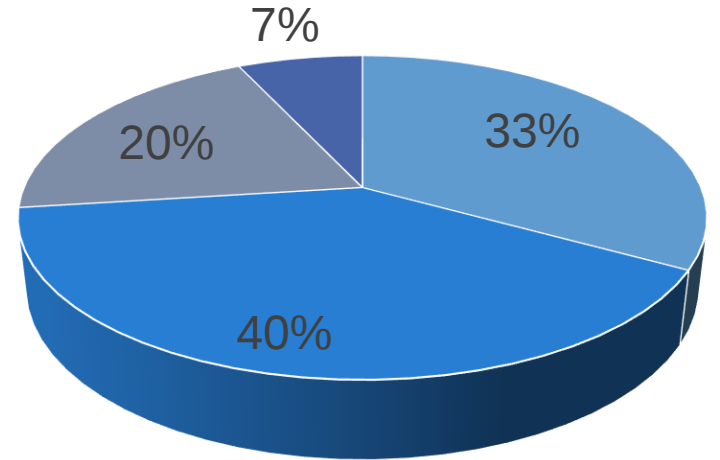
- Companies: NON OK

- Universities
- Research Centers
- NGO
- Public institutions with a direct link with a University
- Foundations
- Associations

Internships

- Where & How long
- **2024** – Duration
 - 2 months: 2 %
 - 3-5 months : 49 %
 - 6 months : 49 %

Stages SIE 2024 - Domaines d'activités



- Bureau d'ingénieurs
- Industrie
- Administration
- Institut de recherche (domaine des EPF)

Internships

- How to proceed
 - Identify a professional domain of interest
 - Search for companies involved in this domain
 - Have a look at the SIE list of completed internships
 - Send your CV and letter of motivation to companies
 - Communicate your internship opportunity to the Section (> Green light)
 - Register your proposal on ISA
 - ...or search for a proposal on **EPFL internships platform**
 - If the answer is positive
 - Communicate with the internship **coordinator** (SIE Section)
 - Search for an internal **supervisor** (SIE teacher)
 - The supervisor must not necessarily be an expert in the internship's domain
 - **Complete the agreement:** to be signed by the internal supervisor, the company and the student; before the beginning of the internship
 - Upload your signed agreement on ISA and send a copy to the Section

Internships

- Agreement

- Three parties: Student – Company – EPFL
 - EPFL: supervisor = teacher from SIE or ENAC
 - Company: supervisor in charge of your coaching
- Agreement between student and company
 - Roles, liability, insurance
 - Title and content of the work
 - Supervision/coaching
 - Confidentiality
 - Intellectual property
 - Salary



Internships

- Your status on ISA
 - 8 weeks during the summer period (out of semesters)
Nothing to do on ISA
 - During the semester: status «stage»
 - Reduced fees; no possibility to attend courses
 - It does not count for the Master cycle's duration
 - Doing a second internship (your own initiative): status «congé»
 - This semester counts in the duration of the Master cycle
 - No agreement signed by EPFL
 - If the internship is done after the Master cycle, **it is mandatory to start the Master thesis right after**
 - If the internship is done after the Bachelor cycle, you have to select status «stage» for the next semester.

Students Interviews



Valérie Zermatten

Valérie Zermatten

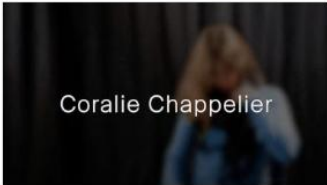
« L'intelligence artificielle, ou le « deep learning », s'utilise de plus en plus dans l'analyse d'images en automatisant certaines tâches pénibles sans supprimer le travail humain, mais en le facilitant. »



Océane Hames

Océane Hames

« Ces changements dans les zones polaires ont un impact sur le climat global. En les modélisant avec précision, on espère de mieux comprendre ce qui pourrait changer dans le futur »



Coralie Chappelier

Coralie Chappelier

« A terme, il est intéressant de savoir comment des bactéries dans les écosystèmes aquatiques vont évoluer avec le changement climatique, et en particulier celles qui peuvent intoxiquer des animaux comme les chiens ».

- <https://www.epfl.ch/schools/enac/education/environmental-sciences-and-engineering/fr/sie-bienvenue/etudier-lenvironnement/temoignages-detudiants/>

QUESTIONS

<https://stages.epfl.ch/>

SECTION DES SCIENCES ET
INGÉNIERIE DE L'ENVIRONNEMENT

