



Bachelor Thesis Guidelines

The Bachelor thesis is a lab-based research internship students are required to complete in their sixth semester (second semester of Year 3). The internship typically takes place over at least an eight-week period and is undertaken in a lab at École Polytechnique or at a partner institution, when possible. The Academic Council may grant exemptions to these stipulations as it deems appropriate.

This 14 ECTS-credit internship provides students an opportunity to pursue a directed, focused, and individual research project that immerses students in the life of a research lab. Consistent with the Bachelor Program's focus on research, students apply rigorous research methods to their project, while developing strong working relationships with research lab members, and experiencing first-hand the functioning of a lab.

The Bachelor thesis must be clearly linked to the students' double major or minor.

Students must undertake a literature review in their area of interest, identifying gaps or inconsistencies to develop their own argument or hypothesis, which they will test. The Bachelor thesis includes two components: 1- a written final report, and 2- an oral defense. The goal of this project is to enhance students' critical thinking, analytical, and communication skills.

Students receive a letter grade (from A+ to F) for their Bachelor thesis taking into consideration, the quality of the work during the internship (50%), the report (25%) and the oral defense (25%). The assessment of the Bachelor thesis also takes into consideration the length of the research internship (8 weeks or more), and expectations are adjusted accordingly.

Should the student's work undertaken in the lab be referenced in a publication, the student's name should appear in the bibliography as well as École Polytechnique, even if the lab may not be directly under the institution's purview.

- *Thesis Supervision*

The work undertaken during the Bachelor thesis is closely supervised and monitored by:

The Referent Instructor:

They are a faculty member from Ecole Polytechnique assigned to students based on the subject area they wish to undertake their thesis in. There are

different Referent Instructors who are responsible for the following subject areas: applied mathematics, pure mathematics, physics, mechanics, economics, and computer science. Referent Instructors are charged with co-completing the *Bachelor Thesis Proposal Form*. They also approve the project topics submitted by students, work with staff in research labs to find potential thesis topics, coordinate students' integration into research labs, serve as a point of contact with Internship Tutors, evaluate thesis reports and oral defenses. Should the internship tutor be unavailable for the evaluation of the defense, they are in charge of locating second readers who grade Bachelor theses/oral defenses.

Students must identify and contact their Referent Instructor prior to committing to any research project for their Bachelor thesis. They must also have the general frame of their intended research project (lab, location, team and main subject) pre- approved by their Referent Instructor **by the end of October during semester 5.**

The Internship Tutor:

As a member of the host organization, they are typically a PhD student, postdoctoral fellow, researcher or academic staff member. They are the student's primary point of contact and direct supervisor during the project's research component. This individual is either attributed to the student, or the student may also locate their Internship Tutor.

- *Bachelor Thesis Report*

The length of the report should be approximately **20-30 pages** (including the title page, table of contents, references). The report will also include a signed declaration related to plagiarism (see document at the end).

The details of the report's style (e.g. font, spacing, margins, etc.) are outlined by the Referent Instructor.

A strong Bachelor thesis report describes the project's background/relevance, the issue(s) that were addressed, its aims, methodology, findings, conclusions, and also provides a thorough analysis and interpretation of the findings.

The thesis report is graded by the Referent Instructor and a second reader named by him/her.

- *Bachelor Thesis Oral Defense*

Upon completion of the written report, students must also present their work orally. The presentation must be 20 minutes and will be followed by a 10-minute question and answer period. The jury will deliberate and then provide a short debriefing on the student's presentation.

Presentations must be made using slides, and must provide an in-depth overview of the project. Students are required to present in a professional level of English free of errors and false cognates. Deficiencies in language skills will have a negative impact on the presentation grade.

The Bachelor thesis oral defense is graded by the Referent Instructor and a second reader named by them, should the internship tutor be unavailable.

- *Bachelor Thesis Proposal*

Students, in collaboration with their Referent Instructor, are required to complete and submit the *Bachelor Thesis Proposal form* to the Bachelor Program Office **by early December during Semester 5**. Exact timelines will be communicated to students by the Bachelor Program Office. The form must clearly describe the internship, indicate the relevance of the research internship to the student's double major or minor and must outline the method of evaluation.

- *Internship Agreement*

All students are legally required to complete an *Internship Information form* **at least a month before the beginning of their research internship**. This form is to be filled out electronically via the online tool used by the Internship Department. Failure to complete this procedure renders students ineligible to undertake research in a lab or otherwise.

The following individuals are required to sign the internship agreement:

- The student
- The Referent Instructor
- The Internship Tutor
- The representative for the lab/institution where the student will undertake their research, referred to as the "Host Organization" in the agreement
- The representative for Ecole Polytechnique



Statement of Academic Integrity Regarding Plagiarism

I, the undersigned **AGRAWAL VRUSHANK**..... [family name, given name(s)], hereby certify on my honor that:

1. The results presented in this report are the product of my own work.
2. I am the original creator of this report.
3. I have not used sources or results from third parties without clearly stating thus and referencing them according to the recommended rules for providing bibliographic information.

Declaration to be copied below:

I hereby declare that this work contains no plagiarized material.

Date : **19 / 03 / 2023**

Signature :