

« Fluid Mechanics and Energetics » Master thesis

Associated documents (these will be sent at the beginning of the MSc theses):

- Template of the regular reporting file.
- Template of the Master Thesis report cover page.
- Template of the Master Thesis defense 1st slide.
- Template of the assessment file.
- Template of the poster.

Validation

Before starting the administrative procedure on e-stage, you will send the topic of your master thesis to Pierre-Luc Delafin (pierre-luc.delafin@grenoble-inp.fr), with the following information:

- a short presentation of the scientific topic (at least 10 lines)
- the email address of the supervisor
- the website of the company /laboratory.

The validation of the topic is followed by an administrative procedure to establish the internship agreement through the e-stages application on the intranet of Ense³ (<https://e-stages.grenoble-inp.fr>). Note that you will need to connect to the vpn of ense3 in order to access the e-stage platform (https://intranet.ense3.grenoble-inp.fr/medias/fichier/procedure-installation-vpn_1473337908393-pdf). This procedure takes time, it is important that you anticipate. Once the first validation of your topic is obtained, you may proceed with e-stage.

After you filled some information on e-stages, an email is automatically sent to Pierre-Luc Delafin to validate your internship. Once this is done (usually after one or two days) then you can carry on completing the administrative information needed for the internship agreement.

The internship office of Ense3 will then: ask you to sign the agreement, send it to the company or the lab for signature, make it signed by the Ense3 head of study and finally send you the agreement with all signatures.

In case you still have questions regarding the administrative procedure and the internship agreement, the email address to contact is:

stages-scolarite.ense3@grenoble-inp.fr

When contacting this address, mention your master in the email.

Tutoring

A researcher / engineer (*company tutor*) will supervise your work in the laboratory / company where the master thesis will take place. The coordinates of this person must be given in the regular reporting file.

A researcher / teacher (*school tutor*) is also attributed to your master thesis. His role remains in general very light during the master thesis. This person must be kept informed on a regular basis about your work progress through a reporting file (template provided) that you will send **every two weeks**. The coordinates of the school tutor are provided by Pierre-Luc Delafin through the e-stages application (generally a few weeks after the start of your thesis).

The school tutor will read carefully your report and assess your master thesis. If your internship is going smoothly (which is very generally the case) the regular reporting is simply a way to keep in touch with the school. It proves to be particularly useful if you are facing problems in your work since it avoids dealing with such problems at the time of the master thesis defense, which would be far too late.

Assessment

The final assessment of the Master Thesis is based on 3 components:

- The quality and quantity of work performed during the master thesis. This assessment is mostly based on the assessment file, which will be completed by the company / laboratory supervisor at the end of the internship, prior to the thesis defense. This assessment will be weighted by the school tutor and the head of the master, taking into account the technical / scientific level of the work. The work assessment represents 50% of the final grade.
- The master thesis report: 25% of the final grade.
- The master thesis defense: 25% of the final grade.

The **assessment file must be sent** to your school supervisor and to the president of the examination panel **before the master thesis defense**.

Master thesis report

First of all, it should be emphasized that you may have to write in practice two reports: one fulfilling the expectations of the company / laboratory where you are performing your thesis and the other fulfilling the FME master requirements. In some cases, it is possible to match both expectations with one single report. Generally, two distinct reports have to be produced, even though they mostly rely on the same material.

The master thesis report can be written in English or in French. The internal report requested by the company / laboratory is of course written according to the company / laboratory own requirements.

The master thesis report **shall not exceed 30 pages** in length but can be, and generally is, completed with appendices since the amount of work performed during a 5-month internship yields an amount of results which cannot be easily summarized in 30 pages. However, the main information/data/results should be presented in the core of the report: **the report must be easy to read/understand without reading the appendices.**

The typical organization of the report is:

- An introduction explaining the **context and aim** of the work, the main problems to solve, the main tools and methodologies used in your study and justifying the organization of the report.
- The first chapter is usually devoted to a detailed description of the problem and of the methodology applied to solve it. If space must be saved for the following chapters, an appendix can include extra details on the methodology or/and analysis tool.
- The following chapters are organized to display the **results** obtained and the associated **analysis**. Here again, the core of the report does not necessarily include an exhaustive presentation of the results: only typical or most significant results, with the corresponding analysis, should be included in the core of the report with other results reported in appendices.
- A conclusion summarizing the key outcomes of the work and giving some ideas for future work.

Pay attention to the format of the document, which should follow the rules of a scientific document. For example, figures and tables should all be numbered, with a caption and they should all be called in the text (e.g. "Fig. 3 shows that..." rather than "the following figure shows that..."). Also, references should be cited properly ([number] or (name + year), with the corresponding list of references after the appendix section).

The **pdf version of the report must be uploaded on e-stage two weeks ahead of the defense**. The first page of the report must comply with the template provided. If the report is confidential, the school and the members of the examination panel will delete the files after the defense.

Master thesis poster

You are requested to prepare a poster, which is intended to make your internship known to the engineers of companies present in Ense3 during the internship defenses week, and to the other students of the school. It should present the field of activities, issues, objectives, and the results obtained. Attention should be paid to confidentiality rules.

On the top right hand corner of the poster, you will mention your name and first name, the FME master and the year (see the template sent at the beginning of the MSc theses). If the poster is confidential, indicate it clearly in red. In this case it will not be shown. If the internship is confidential but the poster can be shown, mention "agreement for showing in the school" with the signature of your company / laboratory tutor, on the back of the poster. Otherwise, the poster will not be shown.

Posters must be uploaded to e-stage one week prior to the defense.

Master thesis defense

The thesis defense takes place in front of a jury/examination panel composed, a minima, of the school tutor and the president of the jury. Ideally, the jury is completed by your company / laboratory tutor if he is willing to join. If your company tutor cannot be present at your defense, it is crucial that the assessment file was sent to the school supervisor and the president of the jury prior to the defense

The defense is organized as follows:

- 30' for the work presentation
- 20' for the questions of the jury
- 10' for debating your grade.

The oral presentation can be done in French or in English. It is based on slides you will prepare in such a way that their content can be understood independently of the thesis report. It should not reduce to a copy / paste of your written report. A change of viewpoint between the report and the defense is often appreciated as a demonstration of the understanding you have developed over your work topic. A template of first slide will be provided.

Depending on the start date of your internship, the defense will take place either at the end of June or at the beginning of September. At least 20 weeks of internship must have been completed before the defense. However, you do not need to worry about the June/September selection as it will be done by the internship office.

You will be informed of the defense details by the internship office of Ense3. Defenses will take place in the Ense3 building or potentially online if you do your internship abroad.