

Guide lines for the M2 internship at SA-USTH*

December 16, 2013

1 The internship

1.1 The tutor

- Welcomes the student and his team and in the work frame of his laboratory.
- Provides a clear scientific goal to the tutee (suited to a six months time period...).
- Accompanies the tutee along his scientific path.
- Provides a short assessment of the student at the end of the period.
- Is welcome to attend the oral defence if her or his time constraints allow it.

1.2 The tutee

- Complies to the way of working of the welcoming laboratory.
- Strives to achieve the scientific aim.
- Understands the tutor is not fully available to his needs, and gains as much autonomy as she/he can.
- Produces a written report (see below)
- Defends his work orally at the end of the training period (see below)

*This document is largely inspired from two documents written by B. Mosser for the “Outils et Systèmes de l’Astronomie et de l’Espace” M2 internships and D. Pelat for M2 internships of the master “Sciences de l’univers et Technologies Spatiales”. Qu’ils en soient remerciés !

1.3 A tiny bit more for the tutee (specially for the first month...)

You may seem completely lost at the beginning of the training period. It is perfectly normal and here are a few reasons why:

- You have been nursed for 20 years of school or university, and you now are in a new environmet with new constraints, rules and colleagues.
- You are still (too much) a student, whereas your tutor expects a curious, efficient and autonomous trainee.
- The time scale of the traning period is 5 months, and not 3 to 30 hours like for a lecture.
- You have 100% of your time to spend for the internship, but your tutor follows 1001 projects at the same time (she/he has other objectives and professional duties than guiding a lost tutee).
- The boundary conditions (lodging, beeing far from home, new food...) are not easy to stabilise.
- The document you have been handled has 1200 pages, of which 1198 are useless and only two are essential, but which ones ?
- You have learned 36 different programming languages during your master, but not the one you have to use for your internship.
- Your tutor is testing you or leaves you alone to identify your skills and missing knowledge, in order to orient the internship towards the best direction for him and for you.
- Even with your full goodwill, the internship's goal seems vague, the motivations blurred, and the environment ghostly. It is not an exam subject, already written and solved, pre-framed so that it is feasible in half a day. It is a scientific problem, much wider and with much deeper unknown. A good part of the work is going to determine what it consists of, at the same time when you bring answers to the questions which arise.

It is your duty as a tutee to organise your planning and manage yourself your work. You will have to formulate the work to do, check that it is in line with what your tutor expects from you and shape it all for yourself, for your tutor, for your written report and for your mar defence...

A few natural rules:

- Don't expect everything from your tutor.
- Identify the other useful people for your internship.
- Identify the ones who are available.

- Identify the ones who are the most efficient for your purpose.
- Identify the ones appropriate for each task.
- Adapt to the rules.
- Formulate (tell, write down, give sense to) each step of your work.
- Be autonomous; this does not mean absence of communication, but efficient communication (after suitable pondering).

That being said, situations may occur where you could really lack material for your work: in this case you should rapidly settle down the matter with your tutor, explain your analysis and how it requires more information from his part. You should of course contact us quickly if this arises.

After typically 3 or 4 weeks (even less is allowed !), the internship should be running, and a good deal of the above advices should be out-of-date.

2 Written report

We expect them for the end of august, the precise dead-line will be communicated to you. A delay may be obtained (typically if the tutor is in holidays, say...) but we should never get it later than a week before the oral defence.

This document should clearly spell out the main scientific goal, the context, a small bit on the working environment, the detailed objective(s), the tools used, the measurements, the results. It should discuss the results, lay out some prospects if any and conclude.

A few guide-lines for the report:

- 10 pages is too few, 100 pages is too much.
- It will be written in English (French is also accepted, but with a summary and conclusion in English).
- The report must be synthetic, not too detailed, or it will be out-of-date as of the end of your internship.
- It must be understandable by a non-specialist, but an expert must be happy to read it.
- It needs to make obvious your own contribution to the work.
- It will be all the more useful to you as it is useful to your tutor.
- It will be presented under the label of the university where you belong.
- More and more companies ask for the confidentiality of the report (for reasons more often futile than not). Warn us as soon as possible, we prefer that the jury reads an incomplete report rather than no report at all.

3 Defence

The oral defence will take place in september. If the tutor cannot make it, warn us before so we can contact him before the defence. The oral defence is timed and must aim at less than 25 minutes. It will be followed by questions and a private discussion with your tutor if he is present. The jury will then deliberate and mark the internship according to the guidelines below. The questions aim at clearing up some points of your report or your talk which may remain obscure, testing your understanding and probing you on some more tricky details. The presentation will be in english (french is also accepted).

A video projector will be made available to you, but it is always wiser to come with a .pdf version of your presentation on a separate key (or even better: send it to us before hand). Be aware of the difficulties for animated videos and compatibility problems between PC and Mac.

4 Mark for the internship

4.1 Jury

The jury usually has four members. They all read the written report. It consists of

- two members from the master steering comitee, present for all oral exams (to ensure homogeneity and inter comparison)
- one teacher from the master
- one external expert

After the defence, the jury talks with the tutor, but the tutor leaves when the mark is elaborated.

4.2 Mark

Five subjects will be noted from 0 to 4:

- Work and results: more quantitative than qualitative. Has the contract been fulfilled ?
- Autonomy and novelty: mark the qualities of a future researcher or engineer.
- Understanding, answers to questions at the oral: understanding of the subject and the scientific issues.
- Written report: as previous item, but from the written report.
- Oral presentation: idem, for the oral presentation.

The jury members mark each of the above five subjects, half-points are OK.
The final mark is the sum of the median for each of the above five subjects.

Adjuments can correct for some problems which might have arised: tutor
absent (0, +1) or student absent: (0, -2).