

# **DEVELOPMENT OF MECHANICAL ENGINEERING INTERNSHIP**

Creating a New Process Model of Internship

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<p>Abstract</p> <p>The aim of this thesis was to improve the internship process of Savonia University of Applied Sciences. Explanations about the importance of an internship in a student's life and the difference between theory and learning in practice are demonstrated in detail in this thesis.</p> <p>With the help of Savonia University of Applied Sciences and its partnership universities and also social networks, interviews of students were made about their experiences and their satisfaction with the internship process. That allowed the writer to find the best, recent practices of the internship, analyze them, and use these analyzes to create a new model.</p> <p>As a result of this thesis, a totally new internship model for Mechanical Engineering program was introduced. The aim to increase the potential of work placement was reached.</p>			
Keywords Benchmarking, Internship, Process model			

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## 1 Introduction

The purpose of this thesis was to develop the internship process of engineering students at Savonia University of Applied Sciences. The internship practice is very important for polytechnics. It gives theory and practical skills to open more opportunities for the future. However, many universities of applied sciences do not pay too much attention to their process, before or after the internship. As the result, work experience does not give all the potential advantages for the learning and training of an individual student.

In this thesis, a new version of Internship model was created for Mechanical Engineering program taught in English. The new model of the internship is totally different. The aim was to increase the potential of work placement. The internship should give all the skills that cannot be learned at the university. In fact, what student can learn during an internship can be far more valuable than the theory taught at the university. The internship is a different type of learning, and the way students learn is also different. This also explains those differences of learning.

Benchmarking was the method used to improve the internship model. It is a common and very useful technique to improve yourself by looking at others. Benchmarking, in that case, means that this study is looking at what is done well in the other universities and use that information to improve Savonia's processes.

The first step was to find which universities can be used as a model. As a matter of fact, the universities which say that their processes are the best cannot be trusted. An investigation was needed to be made, and for that, it was decided to ask the students, gather opinions and information to choose the right models.

The second step was to interview the chosen universities and their students to have all the material needed to create the new model to improve the internship experience in Savonia University of Applied Sciences.

## 2 The Internship Process Nowadays

As Confucius said, “Tell me something and I will forget it, show me something, and maybe I will remember it, involve me and I will learn.”(circa 450BC). University has an essential role because it gives complete knowledge of a certain field of study, but that is only a halfway to the target. The second major part to achieve the target is to learn practical knowledge and skills.

Savonia University of Applied Sciences gives an opportunity for practical training in Finland or abroad during the studies. The duration of an internship in Mechanical Engineering program is thirty weeks, which means six months. The internship can be done during one working period or separated, having six weeks of non-professional internship and twelve weeks of professional internship twice. There are several career opportunities that are listed on the website of Savonia University of Applied Sciences (2), such as Project Engineer, Project Manager, Sales Engineer, Marketing Manager, Quality Engineer, Purchasing Manager, Production Planner, Inspection Engineer, Business Adviser, Consultant CEO and also Trainer.

Every student of Mechanical Engineering program at Savonia University of Applied Sciences has access to job placement instruction on the intranet. Practical training like Internship requires filling in applications before the working period and writing a report afterwards. On the other hand, the report does not give the full awareness of knowledge student proved or learned during the entire Internship. The key issue of preparing for training is objectives of internalization. The university and a company set general objectives for an internship that could help a student to understand tasks for future placement.

### 2.1 How to Find an Internship

Sometimes Savonia University of Applied Sciences may help you in the process of finding an Internship and give some options. Perhaps, most of the time, students have to find an internship by



themselves on the Internet or by contacting different companies. There are a lot of difficulties during the process of finding an Internship, especially in professional one. For the first non-professional experience, it is enough to work even in supermarket customer service, in a restaurant as a waiter, etc. The only difficult thing can be the language barrier, but it depends on the country the student would like to work in.

However, the second and the third Internship period must be in professional study field for twelve weeks each or twenty-four weeks altogether. It is very hard and almost impossible to find a paid Internship without any previous experience, and most organizations do not answer students. Obviously, there are a lot of start-up companies that are willing to take a trainee but without any compensation. So here is a possibility to gain experience but unfortunately, students must provide for everything by themselves. Also, it is common that students find a summer position because of personal contacts or families.

Furthermore, it is not possible to separate internship periods so that student works in one six month period. Sometimes it is easier to find a good position for a longer period because organizations prefer students to stay longer, so they do not have to search for somebody new. Then again it depends on the country where the student wants to work, and previous experience.

## 2.2 Support Function

Students of Savonia University of Applied Sciences do not usually have help from the university to find an internship. However, sometimes teachers can give information about some companies or positions that are similar to teachers' course field. With this in mind, it can be very helpful if a student is interested in the position and also has enough knowledge in the professional ground.

On the other hand, during the first year of studies students of Savonia University of Applied Sciences learn how to write Motivation Letter and CV according to European standards. It helps to know information

about basic documents to find an Internship. Unfortunately, for a lot of enterprises, this kind of CV is not enough, so students have to learn more on how to make their Resume more concrete and successful.

### 2.3 Administrative Process of Internship

First of all, a student of Savonia University of Applied Sciences must speak to a teacher that is responsible for internship program. If the chosen internship suits to the professional study field, then a student can continue with the next step. Afterwards, a student must fill in internship plan with all general information about himself or herself, responsible teacher and the company. Also, there must be some detailed information about goals and aims for the internship period, responsibilities and duties, working hours and salary. This part is made by the student. Nonetheless, the teacher and responsible person in the company must sign the paper. After that, the student can start an internship without any problems.

### 2.4 Reporting Process

During all those three periods of internship, a tutor in the company helps a student during working process and writing a good report according to the Internship. The teacher usually does not visit the company but reads the report afterward and considers if a student reached the goals stated before the internship.

There is a report at the end of every internship with the same template:

- Introduction of the company
- Description of the employer organization and duties
- Learning objectives
- Professional growth.

After the internship, the teacher will check the student's report and give credits of the internship. For instance, a student does not have to do any presentation or a project on the Internship. For every internship the company evaluates the internship and gives some feedback on his or her job: working in a team, bringing new ideas, working as a leader etc. All reports and papers are written in English for Mechanical Engineering program.

### 3 Learning During an Internship

#### 3.1 Mature Students Learning

Often the idea of learning gives an image of learning in a class and getting information from teacher or instructor. Theories on how adults learn have changed this thought and led to the ideas that emerged about learning in the workplace. (2)

“Workplace learning refers to learning that occurs during the activities and experiences of work.” This method includes any new knowledge, skills or abilities obtained through experiences at work.

Some contributors to adult learning, such as David A. Kolb and Malcolm S. Knowles, provide frameworks for understanding the process of learning as an adult.

David A. Kolb presents an experiential learning model that underlines experience as a source for learning. This theory “pursues a framework for examining and strengthening the critical linkages among education, work, and personal development”. Experiential learning elaborates a long process and appears through exchanges between learners and their particular direction and includes “adaptations”. Students change their attitude during experiences and cooperation with others and regulate their actions depending on the conditions presented to them. According to Kolb, there are different aspects that allow effective learning. These contain concrete experience, reflective observation, active experimentation and abstract conceptualization. (3)

Knowles, Holton, and Swanson claim that adults learn in totally different ways than traditional pedagogy. The works of Malcolm S. Knowles and David. A. Kolb promote theories trying to explain learning. Marsick and Watkins confirm that Knowles preferred the method of informal learning, but they make two key differences from Knowles’s works. Marsick and Watkins do not consider informal learning as

“predominantly matter of educational method”. Also, do not think it is “only for the individual”. This technique can appear through interactions with other people and beyond of what is guided by teachers.

One key distinction is made when facing the idea of experiences as a part of Marsick’s and Watkins's informal learning method. The “individual point of view” is the major point of learning from experiences as stated by Kolb. In an organizational field, Marsick and Watkins claim that it may not be suitable. (4) (5)

### 3.2 Learning During Training Program

It is important to understand what is meant by the term of learning in the field of work. Learning may cause a change in behavior, even if it is internal and difficult to measure. Rowden gives the definition of workplace learning as “learning occurs during the activities and experiences of work”. It can combine formal methods of training and different of other performances including “on-the-job training, mentoring, or coaching for performance” and also can be represented as “the social interaction between people, people in groups, and groups across boundaries”. Possibilities for learning may happen through different ways. First of all, the workplace that is the main source for learning. As claimed by Rowden, “the workplace provides an environment rife with learning opportunities”. Marsick and Watkins claim that learning can happen every day inside the workplace. Moreover the need to learn and interact with other people gives employees the way to learn. (5) (2)

Workplace learning is not the same as training. He explains that outside the collection of new knowledge, abilities or skills “learning takes in the total of an individual's acquisition and assimilation of experiences, information, and daily activities”. Training concentrates less on the possibilities for learning that happen in a normal working environment. Learning during Internship implies all of the elements an employee would face during workplace setting. It contains more than formal training. (5)

The internship gives a setting from where to learn, participation by who are in it is also important. Learning happens as a combination of the student and the experiences inside the workplace. (2) Billet characterizes several areas that support learning experiences. Those are performances an employee is given to take part in, their “guidance” by other colleagues and their level of “engagement” within the workplace.

Another key thing to remember is there are benefits connected with workplace learning. Individual level learning profits both of the company and the person. David Boud and John Garrick shows a combination of the goal of learning including the company, the person, and the social environment. (7)

These contains:

- Improving performance for the benefit of the organization
  - of self as a worker
  - of the team of the company.
- To perfect learning for the profit of the student
  - for self
  - for personal growth and internal learning.
- To perfect learning as a social investment
  - for environment and society
  - for the team (including learning organization)
  - for the future company.

### 3.3 Internship Learning: Informal and Incidental

Internship learning can be divided into two types: informal and formal. Formal types include structured training period. Marsick and Watkins show other two methods of learning which take place formally: informal and incidental. Informal learning “is predominantly experiential and non-institutional” as

well as it may happen as a result of “self-directed learning, networking, coaching, mentoring, performance planning, and trial-and-error”. The informal type of learning shows up from experiences during training that comes from participating in performances inside the work field. This type of learning happens if an employee is actively involved in the job. Likewise, Garrick shows one assumption of informal learning which is “that there are indeed rich sources of learning in day-to-day practice situations”. (5) (8)

Incidental learning is a type of informal learning. It is “unintentional, a byproduct of another activity” and can be led from “learning from mistakes, assumptions, beliefs, attributions, internalized meaning constructions about the actions of others, hidden curriculum in formal learning”. Informal learning is different from incidental as it can sometimes be a planned performance when incidental learning is never planned. Both informal and incidental learning are characterized and differentiated from formal learning by Marsick and Watkins. Informal learning “differs by the degree of control exercised by the learner, location (not classroom based), and predictability of outcomes”. Also, is it facilitated with “self-directed learning, networking, coaching, mentoring, performance planning, and trial-and-error”. (5)

Marsick and Volpe conclude informal learning is an integration of work with daily routines, triggered by an internal or external jolt, not highly conscious, is often haphazard and influenced by chance, inductively occurs through action and reflection, and is linked to the learning of others. (9) When a student reflects theoretical concepts with his or her own experiences, he or she will be aware of what was learned.

## 4 Benchmarking

Benchmarking is the first and for most of us, a tool for improvements achieved through comparison with other organizations recognised as the best within the area. In this chapter, are presented some central definitions, different benchmarkings, and the motivation for using benchmarking. Also benchmarking is positioned in relation to other quality and improvement tools in use in the organization as well as strategy and strategic planning. Pre-conditions for using benchmarking are also reviewed. (1)

### 4.1 Definitions of Benchmarking

Benchmarking is the practice of being humble enough to admit that someone else is better at something, and being wise enough to learn how to match and even surpass them at it.

A benchmark is a measured achievement recognized as the standard of excellence for that business process. It is the systematic process of searching for best practices, innovative ideas, and highly effective operating procedures that lead to superior performance. Best practice benchmarking, considering the experience of others, is a fundamental approach to managing in today's work world.

The original meaning of the word is a predefined position, used as a reference point for taking measures. There are several different theories about where the word benchmark comes from. One of them claims it to originate from geographical surveying, where a benchmark is a topological reference point in the terrain. The position of other points is given concerning this benchmark. (Andersen, et al., 1996)

Another theory says that the word comes from the sale of fabrics, where the stores usually had, and other still have, a ruler fall and could not be found again to measure the amount of fabric. Thus, the salesperson took measures against a benchmark.



A third one claims that benchmark comes from fishing contests. The size of the fish is compared by placing the fish on a bench and measuring the length of it by using a knife to make a mark on the bench. When the next fish is put on the bench, one can easily see whether its size matches the previous ones (1)

## 4.2 Different Types of Benchmarking

Benchmarking is about comparing a company with other companies. One can compare the company on a whole or one can compare processes, functions, products, etc. different types of benchmarking can be defined based on what is compared and who it is compared with.

What is usually compared:

- Performance benchmarking
- Process benchmarking
- Strategic benchmarking.

What is usually used for comparing:

- Internal benchmarking
- Competitive benchmarking
- Functional benchmarking
- Generic benchmarking.(10)

### 4.3 Benchmarking Tools

There are many benchmarking methods each having different analytical focus. The methods are mostly known and shown in the following summary.

You can find a list of different benchmarking methods below:

- Comparison analysis
- Graphs: Pie chart, Bar chart / Histogram
- SWOT analysis
- Price/performance ratio
- Potential analysis
- Life cycle analysis
- Market growth/market share portfolio
- Market attractiveness/competitive strength portfolio
- Portfolio attractiveness in customer/supplier position
- Technology/resource strength
- Market position/technology position portfolio
- Contribution margin/cost development portfolio
- Price/customer satisfaction portfolio
- Revenue share/revenue portfolio

In this essay the internship processes were compared by analyzing Savonia's process and the processes of other universities. Charts and diagrams were used to evaluate the satisfaction of customers, in this case, the students and then a comparison analysis was made to be able to create a proposition for a new method.

First of all, to go further the study needed data to make benchmarking work. It was decided to conduct a survey that was given to students by mail thanks to universities who agreed to help in the benchmarking process made here. The aim was to have enough feedback from students, choose the most successful internship methods according to the answers given and compare benchmarked methods to Savonia's one and create a new model thereafter.

However, some of the universities refused to participate due to confidentiality issues. Therefore, the survey was made anonymously for students and universities to make universities more willing to answer the questions. For the best result, this thesis needed to have some official results. So it uses the analysis of two universities: ESAIP and ETSL because they kindly authorized this study to talk about their process.

## 5 Interviews

In this chapter, explanations about how the information about the internship processes was gathered from a survey that was sent to all the universities and to all the network that was available. The decision was made to conduct the survey by mail to provide more trustworthy, serious, and accurate answers. In total, 63 opinions were gathered from different universities, mostly from France, Finland, Spain, Belgium, and Russia. Here is the survey that was sent to the students:

### SURVEY ABOUT INTERNSHIPS IN YOUR UNIVERSITY

UNIVERSITY	
COUNTRY	

1) How many Internship do you have to do for your studies: ..... for how long (in total): ..... months

2) Were you satisfied with your internship experiences in your university?

Not satisfied	Rather satisfied	Satisfied	Really satisfied
---------------	------------------	-----------	------------------

3) Did you have a non-professional internship during your university studies?

Yes	No
-----	----

4) How did you find your internship?

Internet	University	Network (family, friends, former employer...)	Didn't find it
----------	------------	---	----------------

5) If you didn't find it explain what the consequences were: .....

6) Did you have courses about finding an internship about how to:

Find an internship	Make a CV	Make a cover letter	Pass an interview
--------------------	-----------	---------------------	-------------------

7) Did you have difficulties to gather information and create your internship agreement?

Yes	No
-----	----

8) Did your mission fit your study field?

Yes	No
-----	----

9) What kind of reporting system did you have for your internship?

Visit of the university in your company	Report during the internship	Report at the end of the internship	Presentation at the end of the internship
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10) Other relevant information:

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**Figure 1: Survey quality of the internship**

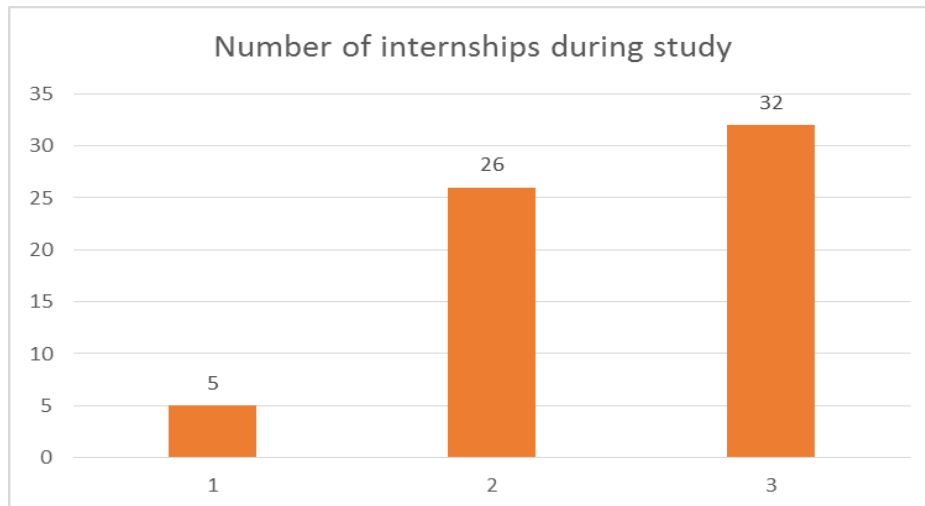
This survey took a long time. It needed to be filled by students which almost took the most of the time of this thesis writing process. After receiving answers, all of them had to be processed and Excel was used to

calculate the results. One-fourth (21 out of 84) of the answers wasnot completed, so they were not used for this study. The percentages used were calculated with this formula:

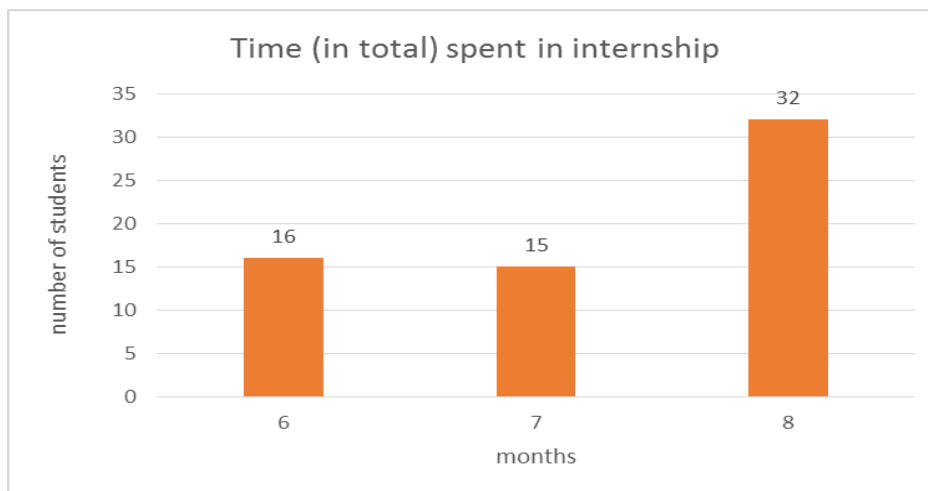
$$Percentage = \left( \frac{x}{63} \right) * 100$$

## 5.1 Results

The length of an internship is similar in different countries and universities (six to eight months) and it is usually split into three periods with a non-professional internship at the beginning, as shown in the graphics, based on this study.



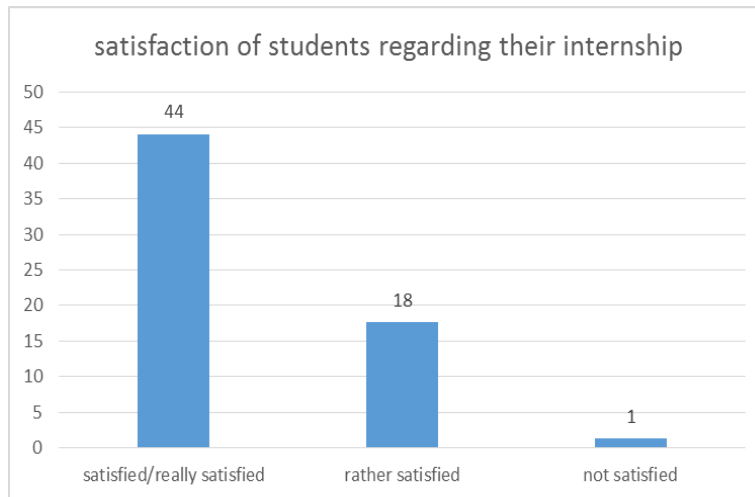
**Figure 2: Summary of number of internships done among 63 students**



**Figure 3: Summary of the time of internships done among 63 students**

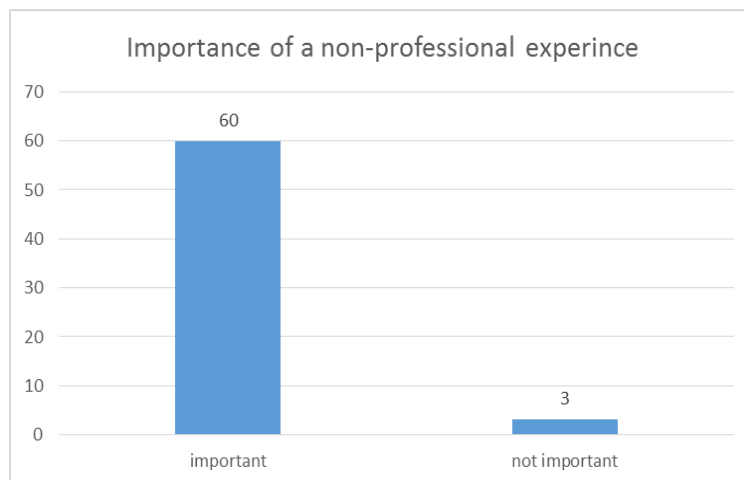
Here are the summarized results that were used for the report:

- 70 % of students were satisfied or really satisfied with their internships. (all the students of ESAIP and ETSL are part of it )
- 28 % of students were rather satisfied (Savonia students are part of them)
- 2 % of students were not satisfied



**Figure 4: Summary of satisfaction of internship among 63 students**

- 80 % of the students had a non-professional internship.
  - 95 % of them think it is an important part of their education.



**Figure 5: Summary of the impact of nonprofessional experience among 63 students**



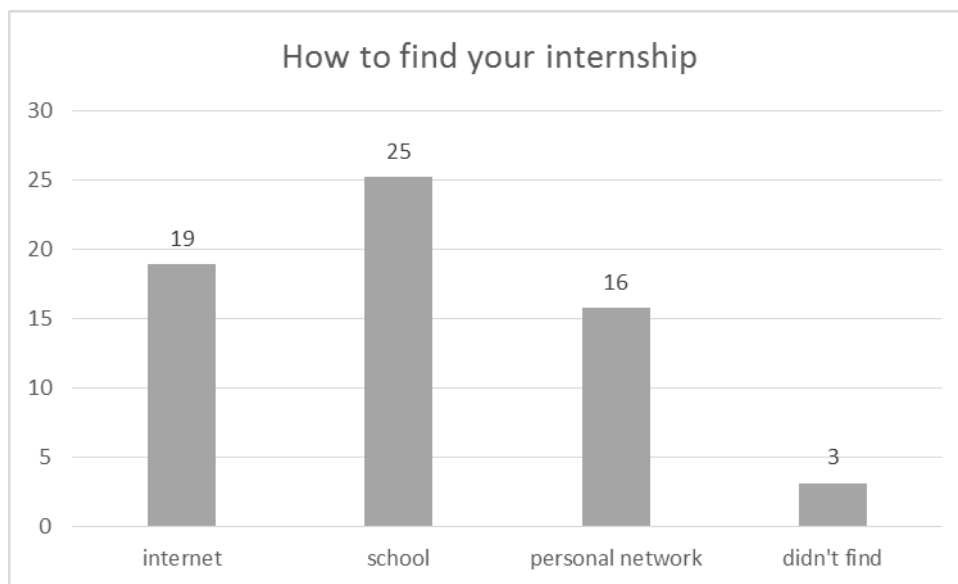
Even students who didn't have a non-professional internship recognize the importance of that type of internship.

### 5.1.1 How to Find an Internship

After compiling results about the way students found their internship it appears that:

- 30 % of students found their internships on the internet
- 40 % of students found their internships with the help of the university. All of them were from other universities (ETSL and ESAIP)
- 25 % of students found their internships with their own networks (family, friends, former job...)
- 5 % of students didn't find an internship.

Students usually worked for the universities or retook one year to do it again, which, in some case is not the ideal way to do an internship.

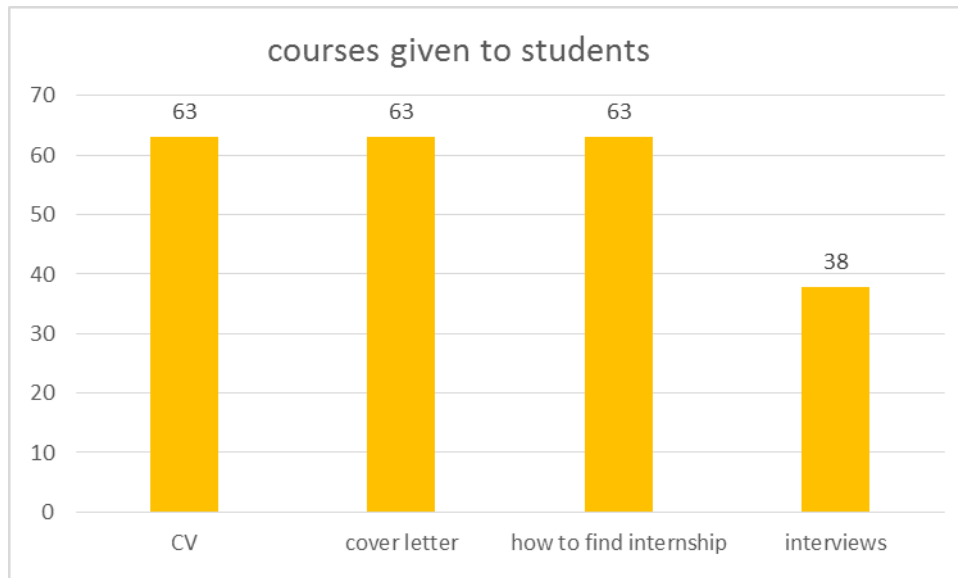


**Figure 6: Summary of the ways to find internship among 63 students**

### 5.1.2 Assisting Operations

All the students that answered the survey claimed that they got help from their university to do CV, Cover letter and to find the internship.

However, 60% were prepared to do interviews. (ESAIP + ETSL mostly)



**Figure 7: Courses that are given to students on internship**

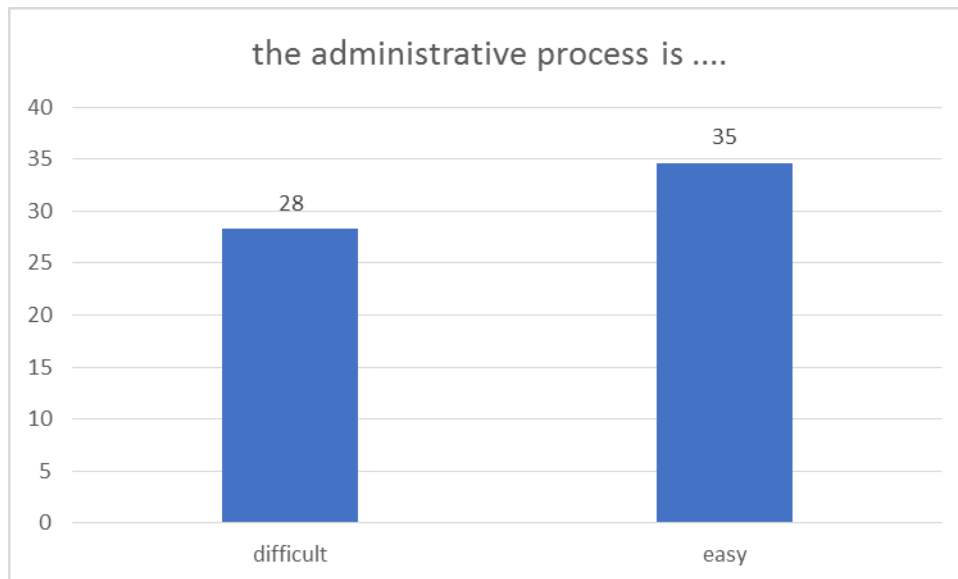
A few students are given interview's courses or attend them. But those are mandatory when you are doing the research by yourself. It is very important to have been given the opportunity to pass an interview of some companies, and decisive for the approval of an internship by a company. For instance, to access a well-known company (Fazer, Coca Cola...), you have to make this interview a success. Some human resource managers can make the interview last for hours. Let's not forget that this exercise makes students more confident with themselves.

### 5.1.3 Administrative Process of Internship

As said, the method is mostly the same for every university; the difference is more in the details and who is in charge of which part.

About the agreement:

45 % of the students think the process and papers to have an agreement are too complicated

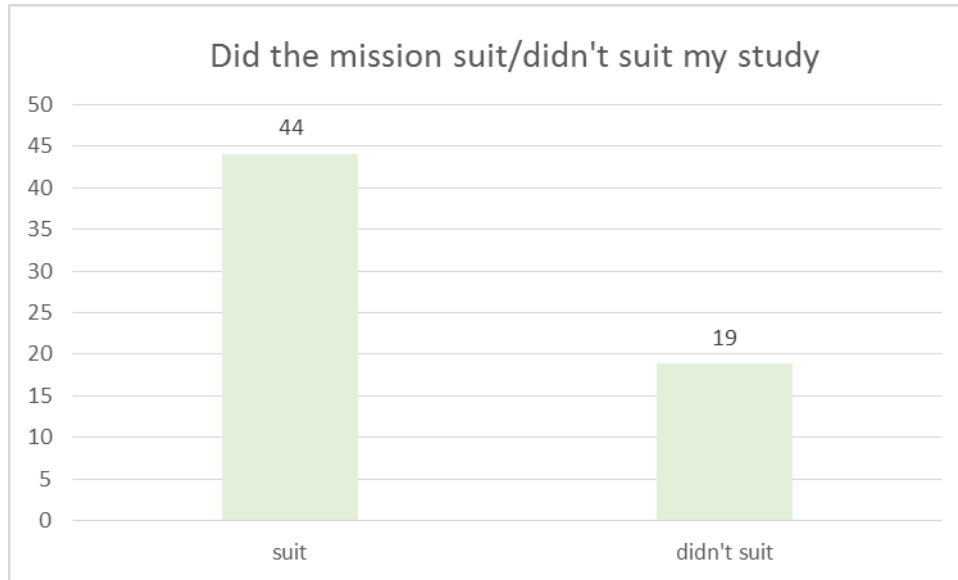


**Figure 8: Difficulties in the administrative process of the internship**

Mostly, students just do not know what to do and struggle to find some information regarding the administrative process. But also the process between stakeholders can take time, and they need to scan and print a lot, which students cannot always easily do if they are abroad

About the mission:

70 % of the students said that the missions suit their studies. It is students from European universities mostly, including Savonia.

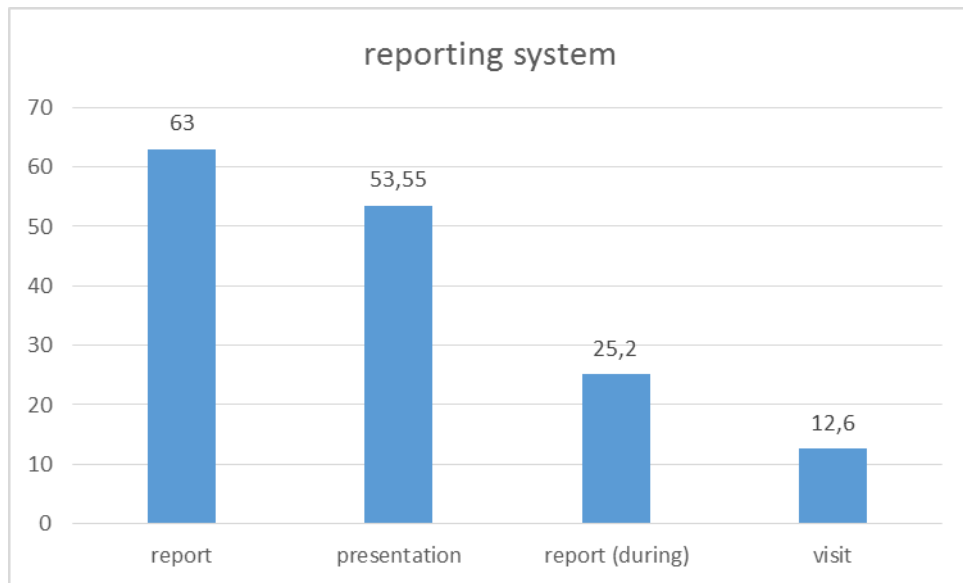


**Figure 9: How the mission suits the studies of the students**

#### 5.1.4 Reporting Process

All the students have a report to give at the end of the internship, but not only:

- 85 % had to do a presentation also
- 40% had to do report during the duration of the internship (ESAIP + ETSL).
- 20 % had a teacher's visit to their workplace (ESAIP).



**Figure 10: The reporting system used for internship**

Students that were most satisfied from two different universities were chosen for the next phase. They were asked to write a report of their universities internship process. ESAIP and ETSL, both French universities had the most satisfied students (100% for ESAIP and 95 % for ETSL) with different processes. To understand this success, teachers and students were called to describe their internship processes in more detail.

## 6 Internship in Different Universities

In this chapter, it is described how the internship process works in other institutions than Savonia. These two universities were ESAIP, a French university of technologies specialized in risk and safety of industry and environment, and ETSL an HND (higher national diploma) university. The difference here will essentially be organizational and financial. Also, the importance of university image and network in the internship research is described.

The choice of including the two universities was made because the interview conducted online showed that their students are most satisfied with their internship overall. Of course, the main information is given on their websites but to have details you must have the authorization of the university first to be able to use the information. Those two universities were contacted and they kindly agreed to share their experience to help to improve Savonia's internship process.

## 6.1 ESAIP

The ESAIP group stands for Ecole Supérieure Angevine en Informatique et Productique, which means Angevine University (region) of IT and Production. It is a university of technology and, even if the name says “production”, the ESAIP is mostly a risk and safety management and green IT university.



**Figure 11: the logo of ESAIP University**

In the study program students in the 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> year have to do an internship of respectively one, two and six months. They are mandatory in order to obtain the diploma, and one of them has to be completed abroad. (5) Every year and for each year there is a presentation of the internship. It is explained what the requirement for the year is and what the students will have to do and whom to contact for help.

The first internship is a basic worker (non-professional) one; it can be anything, anywhere. This is usually the moment that student chooses to do abroad. They have student association for a humanitarian internship in Africa, Laos, India, etc. that can provide a perfect experience and first internship. The second is a professional assistant internship. It means that they are working with a professional of the future job of the student. The third internship is the last one and is professional. The student is given a project, and he has to manage it from the beginning to the end. (7)

### 6.1.1 How to Find an Internship

To find their internship students are asked to look by themselves to learn how to find a job and to experience what are the difficulties you can encounter. Therefore, the university frequently gives offers by mail from former students, or a company that is satisfied by the work of ESAIP student and are looking for another intern.

But, a point has to be made here about the difficulties to find internships. The first internship is usually very easy to find because of the simplicity of task asked and the time needed for it (one month). For this short time in France, they do not need to give a salary the intern, which is what makes the research fast and easy.

For the second one, it's much harder. As said earlier, Two months is the limit for a company to pay an intern and it becomes not valuable for a company to have an intern for this time. Consequences of this fact are the lack of proposition and it is common that students have to use their family or the university to find what they need.

The internship always takes place in summer, when companies are often closed for one month. That affects the research and makes it harder because for a two month internship a company that doesn't close during this period is needed.

The last internship is not difficult to find. There are actually more offers than demands. In fact, a six-month internship in France can be found everywhere, and in the study field of ESAIP, the demand is even higher. It is usual that students can pick what they want and can even refuse offers. (7)



### 6.1.2 Assisting Operations

In the case of an issue concerning finding the internship, the university usually steps in and gives the student the opportunity to have an interview with trusted companies. But, the quality of the student and the success of the interview is important nonetheless. So the university gives guidance on how to write a CV, cover letter, and to pass interviews.

A common way to find an internship for the students is also to talk to the teachers that come from nearby institutions and companies to give them their CV. (7)

### 6.1.3 Administrative Process of internship

For the administrative part, in ESAIP, they have software that can be used on the intranet of the university. There they ask for all the information mandatory for the creation of the internship agreement (following the French law concerning working hours and salary).

The process is strict. If an information is missing, there is a mistake, or the project doesn't fit the demand of the university, you will have to start over and refill the form. This part is completely made by the student. After this, the university gives you a university tutor and prints the agreements sends them to all the stakeholders to sign. (7)

### 6.1.4 Reporting Process

The university tutor is here to follow the student in his work. The implication of the tutor depends on the year of the student. For the third year student the tutor is here just in case of a problem or to help in the writing of the report. With the second year student the situation is the same. But for the third year

student have a report to make on the progress of his duties every three weeks and the tutor visits the company.

A report is written and a presentation is given at the end of every internship. For the first two internships there is the form of a usual report with chapters about:

- Company
- Mission
- Documents
- Method
- Result
- Conclusion.

A student has to give this report at the end of the internship and give a presentation (PowerPoint) in front of a jury 2-3 weeks after the internship period.

For the last internship, it is a lot more complicated. The students have to write a report every three weeks about their work. And the final report has two more chapters:

- Scientific aspect
- Financial aspect.

Furthermore, 60 % of the report has to be written in the university language (French), 20 % in the second language (English) and 20 % in the third language (Spanish or German). It is the same for the presentation in front of a jury.

For every internship, the university asks the company to grade the intern on his work and professional behavior like punctuality, independence, innovativeness, team working skills, etc. That grade counts in the final grade. (7)

## 6.2 ETSL

The ETSL is an HND university. It takes place right after high school graduation for two years plus one year of specialization. ETSL means university of laboratory technician. It teaches students the proper way to work in a laboratory with quality and professionalism.



**Figure 12: Logo of the ETSL university**

The student have one internship of two months in the second year and one of six months in specialization stage. This works mostly the same way but with fewer opportunities due to the standing of the university. The first internship is a professional one; the intern is working in laboratories and conducts experiments. It can be in many different environments: cosmetics, research, paint/ink production, justice (police scientist), etc. 6)

### 6.2.1 How to Find an Internship

The student has to find the internship by himself. And here, the network is not as developed as the one of ESAIP. Therefore, the research is harder because also the demands are high in this field. Students look on the internet and send emails; they can go directly to the door of factories and ask for interviews. All the ways possible are good to find the internship as there is such a hard competition. A lot of students got an internship through their own networks like family, friends, and former employers. (7)

### 6.2.2 Assisting Operations

The university provides a few offers, but they give them for the best students because they don't want to lose the trust of the companies to which they send students every year (LOREAL, CNRS (Centre National de la Recherche Scientifique) (National Science Research Center)).

To compensate for the lack of network, the university provide a lot of help to pass interviews and write your CV and cover letter, more than in the ESAIP. They also practice interviews and communication/posture classes. (7)

### 6.2.3 Administrative Process of an Internship

The university provides an information paper that the company needs to fill and send back to allow the university administration to create the agreement. The rest is common, they print it, and send it to stakeholders to sign.(7)

### 6.2.4 Reporting Process

The reporting system is the same for both internships and several chapters are based on scientific approach:

- Presentation of company
- Mission
- Tools
- Method
- Result
- Conclusion.

A tutor is following the student to help in case of problems, and again the university asks the company to give a grade to the student. A presentation in front of a jury is held at the end of the internship. (7)

## 7 Conclusions about Internship Processes of the Other Universities

In this part, the opinion of the writer will be given about the other types of internship process that were analyzed for this study. First of all, the internship takes place during summer (July/August) for short internship and the six-month-internship, the timing is from the beginning of the year until the end of summer (March/August).

The system is very different and stricter than the one of Savonia. The student doesn't have the choice of the period, dates, and the mission has to be clearly set up and also different every year. Also, students have asked to be very independent and deal with almost everything to get their internship. To afford this, university tends to give more courses and all the tools to students. In writer's opinion, the internship doesn't have to be this strict, because it makes it harder to find an internship. But to teach students to be independent and give them courses is a huge plus.

The reporting system was a surprise. It is complete and gives real value to the internship and is a point that needs to be worked on to get more credits from the internship and the work done by the student. Surely it will be more work for the student and eventually for the university, but it makes the first working experience of students more official and complete. Their working experience improves, but so does the experience of the company and the university. Reports are so complete (scientific templates are used) that makes it a source of information for courses or studies after. The work of the student is taken more seriously as the relationship between the company, and the university is more present in a professional internship (report during the mission, calls, visit of a teacher, etc.). The study shows that universities are looking for a partnership between them and companies. This method works and it provides strong

partnership which allows them to trust the university and ask for more students to make internship with them as they know students will do a good job.

## 8 New Model

The best part of each method presented in this thesis were taken to create a new model that will surely improve the internship system of Savonia. According to all the information gathered from students, an internship is the most important part of their study. This is the place where they learn most.

The model of six months provided by Savonia is the one thing that is innovative. But the need of a non-professional experience before rushing into the professional aspect of the job is something that 95 % of the students said to be really important in order to understand what is work and give them the occasion to have a complete vision of the job and make them better managers. Applying a new model that makes a non-professional internship of one to two months mandatory is recommended for the sake of the future engineer.

### 8.1 How to Find an Internship and Assisting Operation

Savonia must provide the best process to help and teach the student to be responsible and independent. The university needs to give the students guidance but not do the process of finding an internship for them. That is why it is recommended keeping the level of help provided to students and giving the students all the offers that the university receives by mail and also a few useful websites (“indeed” for instance).

But this should be done only at the beginning. Savonia must keep in touch with companies and have a database of former satisfied companies. Savonia can contact companies to check and book the places for internships to provide a fast help for the student who struggles most. It has been proven to be successful in ETSL with LOREAL, and in ESAIP with almost all the companies located around the university.



To maximize students chances, the university must give more classes about finding an internship, especially an internship abroad. The university should give courses every year even if it can be redundant. It can only be good for the students to keep focus about it and also to have more feedback and improve every year. It is also important to practice cover letters, to gather every year new skills and teach how to use information in the CV, practice interviews... In ESAIP, courses with professional workers are provided to get closer on what companies are looking for in a CV. Savonia has a lot of partners in Europe and surely their students and teachers can provide some guidance about the process in their countries regarding CVs, cover letters...

For example, it has often been the case that a CV written using the “Europass” template has made students lose a few opportunities to work abroad. Without the trust or partnership between a company and a university, a student will be treated as a student of the country of the company. Therefore, if the presentation of the trainee (CV, cover letter, and interview) does not fit the standards set in the country the chances to obtain an internship is highly reduced. Attached with this thesis, you can find a French CV model that has been more useful and precise in finding an internship. (Appendix 1)

## 8.2 Administrative Process of Internship

The information needed to apply for an internship is overall very similar. But, it is recommended to give more work to the student. At least about the mission/subject of the internship. Often the company gives it, but it doesn't mean that it can't be changed or discussed by the student with the company. Then the student should give all the information required for the agreement (name, dates, codes, contacts, etc.) and, according to the template of the report, what will possibly be the mission and the report, briefly. This information gathering needs to be totally completed before moving forward to the next step that will be done by the university only. (Appendix 2)

The teachers validate the mission and then the administration will make the papers, and send them to the stakeholders (company, student and the university). This method is inspired by the ESAIP method. But it must not be done through software but on paper. At least as long as the method is tested.

### 8.3 Reporting Process

As it was mentioned at the beginning, the reporting system of Savonia is not totally complete to assess the experience of the internship perfectly. Therefore, it is not mandatory to use the scientific method, but students should put on paper their method and process. The template of internship report of Savonia could include the following parts:

- Introduction of the company
- Description of the employer organization and duties
- Learning objectives
- Methods used to reach the objectives and duties
- Professional growth.

Also, this new model makes the reports more useful after the internship. They can be reused for similar duties or teaching.

But the experience of the writer and the opinion of other students proved that to have a financial aspect in the mission is interesting and gives credibility as an engineer. It can be interesting then to add this part in the report of the professional internship. Specific courses are required to make them able to understand this new objective. Therefore, it is recommended, but the decision is left to the university if such a thing can be asked from their students.

Also, 85 % of the students that answered the survey about internship experience made a presentation afterwards in front of a jury and the presence of the company tutor. Clearly, that needs to be part of the

reporting process. Once again, it can be only a requirement in a professional internship. The presence of the company also can promote the relationship between university and professionals (especially for Finnish companies). Savonia needs to show it's interest and get more involved with the companies they send students to have internships.

## 9 Conclusion

The internships, as described in this thesis, are an important part of student life. Therefore, they have to be controlled to ensure the best experience for the student.

The length of internship and how many time internships there are may vary, but it is important to give engineering students the opportunity to understand what work is. From the cashier's work to the store manager for example. It has been said to be the most important aspect of the internship process. An important statement of the internship process can be given now: **to have a non-professional experience** as well, to be a better manager.

University must give the best chances for their students, going through courses of the professional world must be part of their education. Many universities in Europe, offer a full training about finding a job/internship: how to make a CV, how to make your cover letter, how to pass your interview, where to find job offers, how to answer them. Some students are ready for those processes, and all of them found their internship by themselves. Therefore, another important statement of the internship process is: **To teach the students** to be independent and be **successful in their job finding process**.

The administrative process is a particular process and can be hard for students to understand. In some universities, this process is made through software and the students are asked to find all the information to be able to access their agreement.

On the other hand, it is important to make sure that the mission suits the need of the university and the student.

In this part, the students will be given a list of information they must find and transmit to the university to guarantee the success of the mission and to create the agreement as fast as possible (Appendix 2).

At last, the reporting system must be as important as the internship itself. With at least a **report written at the end and a presentation**, the contains all the information about the company, the mission and more importantly **the method** the student used to fulfill his missions. Detailing the report allow to showcase the value of the student work and make accessible by all to understand the internship and use it for further studies.

The presentation is the official part of the journey, it gathers all the stakeholders of the internship and makes the trust between them a start for future collaboration. For a **local internship**, another way to trust and begin a partnership is to send teachers/tutors to visit their students in the company.

Finally, the keys for a good internship are:

- a good preparation to find the internship (CV, cover letter, etc.)
- to make sure the mission fits the need of the students
- to make the process clear to reduce problems and delays
- to value the job of the student by making the reporting system more complete
- to make the internship an opportunity of a partnership between universities and companies.

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and ETSL.

# APPENDIX 1

## French CV for internship and job offers



**Viktoriia MINKINA,**

22 years old

21 rue de seine,  
94140 Alfortville FRANCE  
Téléphone : +33 789 76 31 94  
viktoriia.minkina@yahoo.com

### STUDIES

- 2016** French Courses at Allaince Francaise (France, PARIS)
- 2016** Industrial Management, Engineering, Savonia (Finland)
- 2015** ESAIP, Angers (France), Information Technology, Risk Management, Human Error
- 2012** Karelian State Petrozavodsk Academy, Petrozavodsk (Russia), pedagogical department. (English)
- 2011** Derghavinsky lyceum Petrozavodsk (Russia) Information Technology (4.5/5)

### SKILLS

#### Languages:

- English (fluent)
- Finnish (basic A2)
- French (basic A1)

#### Information Technologies:

- Microsoft Word®, Excel®, Powerpoint®
- Windows (vista, 7, 8, 10), Mac OS, Linux
- C++, Pascal

#### Social network:

- Facebook
- Tumblr
- instagramm

### PROFESSIONAL EXPERIENCE

- 2016** **Management of operations**, Aquatoria 10 ltd, Ptrozavosdk (Russia), 2 months
- 2015** **Marketing department manager**, Optimal Nachhilfe GbR, coLanguage, Gent (Belgium), 3 months
  - Developing of SEO strategies
  - Content marketing
  - Social media marketing
  - Product and project management of online language courses
- 2014** **Customer service and a sales person in the supermarket**, Vaalimaan Kauppakartano Oy, Rajamarket, Lappeenranta (Finland), 2 months
  - Public relations : Customer service, customers problem solving
  - Sales skills: promoting products, communication about sales and deals
  - Organizational skills: Time management, schedule, team work and optimizing work time

### HOBBIES

- Reading,
- Painting
- photography, blogging

# APPENDIX 2

## *List of information to create mission and the agreement:*

### Student's information:

- Address:
- City:
- Postal code:
- Country:
- Phone number:
- Security number:

### Company's Information:

- Name:
- Code of the company (depends of the country):
- Address:
- City:
- Postal code:
- Country:
- Phone number:
- Website (if there is one) :
- Activity (work field):
- Number of employees:
- Director:
- Address where to send the agreement (if different)

### Agreement signatory's information:

- Name:
- Phone:
- Mail:
- Function in the company :

### Tutor's information:

- Name:
- Phone:
- Mail :
- Function in the company :

### Theme of the internship:

Field of study:

Year:

Internship type: professional/nonprofessional:

Date of the internship:

Salary:

Description of the mission:

Study field teacher	Administration	Name of the unversity tutor :
OK      need review	OK      need review	



