

# **Guide for Host Organizations Master Project Interns**

**Business Analytics (BA)**

**Mathematics**

**Stochastics and Financial Mathematics (SFM)**

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# 1 Introduction

This document serves as a guide for companies wishing to offer an internship to students of the Vrije Universiteit Amsterdam for the Master project of one of the following programmes:

- Business Analytics (BA);
- Mathematics;
- Stochastics and Financial Mathematics (SFM).

The internship differs from all other parts of the study programme in that the student is required to spend a period actually doing an academic research within an external (private sector) organization, usually doing so on a full-time basis. In some cases, the internship is undertaken within the university itself, but here too the working methods are those which are usual in the business world. The student will work on one or more predefined projects and is required to create the required products within the stated period.

The student works on behalf of the host organization. The placement is intended to result in a product which is of practical value to that organization. The assessment of the placement therefore relies on input from the external supervisor. However, the supervisor of the Vrije Universiteit Amsterdam has the final responsibility of the Master Project.

The end product of the internship is the internship report' which is also the student's graduation thesis.

## **2 The internship within the programme**

The internship is undertaken during the final (graduation) semester: the last semester of the second year of the master. The internship is a compulsory part of the programme for master students Business Analytics. Students of the programme Mathematics, and the programme Stochastics and Financial Mathematics have the choice between an internal or external (=internship) Master Project.

A prerequisite is that all programme components which culminate in a formal examination must have been successfully completed. If only one component of the master's programme is still outstanding, the graduation supervisor may, at his discretion, permit the student to commence the internship.

Where more than one programme component has yet to be completed, permission from the Exam Committee is required. The request must be submitted in VUnet. However, the student Business Analytics must have finished his BA Research Paper before the start of his internship.

### **3 Objectives**

The objectives of the internship are:

- To research and analyse a specific issue or problem affecting the host organization, and to suggest (potential) solutions.
- To be aware of the relationship between the theory and situation within a company.
- To gain an understanding of the way in which the organization functions. The student will gain a general impression of the way the organization as a whole works, including its primary business processes and its support processes. The internship project should be positioned within these processes.
- To practise and develop social and communication skills. The student is introduced to the standards and values in place within the host organization. He will develop communication skills through personal interaction with the staff of the organization, and through the written and verbal reports.
- To explore potential career options.
- To maintain and strengthen contacts between the Vrije Universiteit Amsterdam and the host organization.

#### **4 Benefits for host organization**

Benefits of an internship for the host organization are:

- Bringing in academic knowledge to analyze and (give an impulse to) solve a business problem;
- The intern is aware of current developments in the relevant field; an intern can do research where employees don't have time for;
- The intern provides new insights at the company, department and also a potential problem;
- The intern might be a potential employee.

## 5 Requirements

The internship experience must meet the following requirements:

- It must be of demonstrable added value to the host organization.  
This requirement relates to the significance of the internship project. However, this significance should not be so great that the business processes are dependent on the successful completion of the project. In other words, the project must not be 'on the critical path'.
- The internship experience must be appropriate to the programme as a whole.  
The project should have a clear relationship with one or more of the individual subject courses within the programme.
- The project must be at an appropriate academic level and must represent clear educational value.
- The student must be able to learn and develop by virtue of the internship project.;
- The internship project must be fully formulated and its purpose defined beforehand.  
Accordingly, there must be a full description of the required end product. In some cases, the activities required to achieve this end product will also be described. This results in an internship proposal that has to be approved by the Internship Board before the start of the internship. During the first month of the internship, the student must work on defining its exact content. This results in the action plan.
- Supervision must be structured, with supervisors appointed by both the host organization (the 'external supervisor') and the Faculty (the 'graduation supervisor' and 'second reader').  
They are jointly responsible for providing appropriate coaching and supervision. The internship boards will advise the respective students of Business Analytics, Mathematics, and Stochastics and Financial Mathematics about the graduation supervisor and the second reader. Coaching and supervision by a postgraduate researcher is also possible, whereupon that researcher's supervisor will be the formal graduation supervisor to the intern. Such arrangements require consultation with the internship coordinator.

## 6 Procedure

1. Organizations can publish an internship vacancy for free on the website of the [Internship Office of Mathematics and Computer Science](#) by sending a link or a pdf-file to the internship coordinator [Annemieke van Goor](#).
2. Students apply directly to organizations (whether found through the Internship Office or not).
3. Once the student has found a suitable internship organization, the student must write an internship proposal and submit the proposal to the internship board. The student usually receives this after a week the first respond. After approval of the internship board, the student approaches the recommended first supervisor and second reader of the university. As soon as the first supervisor has agreed to supervise the student, the student is allowed to start his internship (as long as all the other requirements are also fulfilled). The host company also takes care for a supervisor within the company for the intern.
4. The student should produce the Action Plan during the first four weeks of his internship. It will contain a clear statement of the problem, the role you are to play in solving that problem, a schedule (by week) and a description of the intended output ('deliverables'). The Action Plan must be approved by the graduation supervisor, the second reader and by the external supervisor of the host organization. A copy should then be submitted to the Internship Office ([h.j.m.van.goor-balk@vu.nl](mailto:h.j.m.van.goor-balk@vu.nl)).
5. After the first month the intern should submit his action plan to the external supervisor, and the supervisors of the Vrije Universiteit Amsterdam. He also send it to the Internship Office.
6. The intern must complete his Master project within the specified period (usually six months). This includes writing his internship report (= graduation report) and his final verbal presentation at the company.

BA students have the following additional guidelines. The intern can ask a postponement for at most two months to finish his master project after the finishing data. He has to contact his external supervisor and both VU supervisors. Within those two months the student must have an adequate grade (6 to 10), otherwise the internship will be counted as not accomplished. In exceptional cases the Exam Committee can diverge from this rule after a motivated request from the student.

If there will be a delay in the master project and the student is not to blame, the student should contact all his supervisors as soon as possible to limit the delay. If all supervisors agree, it is possible to postpone the finishing date of the master project. If so, please notify the Internship Office ([h.j.m.van.goor-balk@vu.nl](mailto:h.j.m.van.goor-balk@vu.nl)) as soon as possible.

7. The graduation supervisor ass the final responsibility for the master project. The opinion of the external supervisor is taken into account by a personal consultation and the assessment form.
8. At the end of the internship the student will provide all the supervisors and the Internship Coordinator his final report.
9. Any report which contains confidential information should be clearly marked 'Confidential' on the front cover. The student, in consultation with the Internship Office, is to ensure that the confidentiality is respected at all times. Although the Internship Office will receive a copy of the full report, this version will not be made available for general inspection. In this situation, the student should also prepare an abridged version of the report which excludes the confidential information. This version should nevertheless include the full chapter listing, the description of the internship project, the description of the host organization, and the names of the various supervisors. If that is not possible due the confidentiality, only the title of the report is being published on the website of the internship Office.



## 7 Supervising and coaching

Various people are involved in the overall process, from finding the internship position, through the placement itself, to the assessment of the end results:

### **External supervisor**

During the internship the external supervisor (a manager or other member of staff within the host organization) is the student's first point of contact. He is responsible for direct supervision and coaching, and will therefore hold regular progress interviews with the student. He ensures that the student has access to all resources required to complete the internship project, to include a physical workspace with the necessary facilities, and will provide a general introduction (induction) to the organization. The external supervisor will also ensure that the student has access to all necessary information.

### **The graduation supervisor / first supervisor**

A member of the academic staff (usually from the department of Mathematics or Informatics, but in exceptional circumstances from another department or even another faculty) will supervise the student on behalf of the Vrije Universiteit Amsterdam. Throughout the internship, the graduation supervisor will maintain regular contact with the student and with the external supervisor and with the second reader. Meetings can take place at the host organization's premises or at the university. The graduation supervisor bears overall responsibility for maintaining the level of the internship.

### **Second reader**

The second reader is jointly responsible for maintaining the level of the internship. He will help to assess the Action Plan and acts as the second reader (hence the name) of the internship report.

### **Internship coordinator**

The internship coordinator's tasks are:

Prior to the internship:

- to identify organizations willing to offer internship positions
- to inform students about internship opportunities
- to advise and assist students who are seeking an internship
- to advise and supervise students with regard to organizational aspects (including study progress, finding a graduation supervisor, agreements with the host organization).

During the internship:

- to advise on organizational aspects.

After the internship:

- Documentation

## 8 Assessment

The graduation tutor is responsible for the final assessment of the internship. He acts for and on behalf of the Examination Board. The overall assessment will take into account the input of the external supervisor and the second reader.

Any problems or queries with regard to the assessment will be referred to the Examination Board.

The assessment is based on the following components:

- The process (the manner in which the internship project is undertaken).
- The written report.
- The verbal presentation.

### **The process: performance of the internship project**

Here, the assessment takes into account:

- The complexity of the project.
- The quality of the resulting product(s).
- The manner of working (independence, initiative, enthusiasm, punctuality, consistency, creativity).
- Adherence to the schedule (has the student produced the required products and/or reports on time?).
- Attitude and general conduct (has the student observed the house rules of the host organization, and has contact with management and colleagues been satisfactory?).

### **The written report**

The assessment is based on the full written report of the internship project, to include any confidential sections.

The assessment criteria are:

- The manner in which the specific business problem has been addressed in relation to the theoretical knowledge gained during the programme.
- The general requirements applying to any academic document, whereby findings must be objective and reproducible, and all choices must be properly substantiated.
- The structure of the report: problem formulation and analysis, the methodology applied, definitions and delineation, 'readability' in relation to the intended readership, formulation of conclusions and recommendations.
- Personal input by the author: constructive attitude, empathy, initiative, creativity).
- Communicative aspects (correct use of language, presentation).
- technical aspects (layout, presentation, style and correct use of language);

### **The verbal presentation**

The verbal presentation also forms part of the overall assessment.

The assessment criteria are:

- Demonstrable knowledge of the topic.
- A clear description of the essentials.
- Ability to answer questions.
- Presentation skills, including the use of audiovisual aids.

## **9 In case of trouble**

In case of any problems concerning the internship the external supervisor can contact the graduation supervisor of the Vrije Universiteit Amsterdam and / or with the internship coordinator of the department of Mathematics and Computer Science: Annemieke van Goor ([h.j.m.van.goor-balk@vu.nl](mailto:h.j.m.van.goor-balk@vu.nl) of 020 598 7496).

## Appendix 1:

### Assessment form external supervisor master internship Business Analytics

(to be completed by the external supervisor of the internship organization)

Data intern	
Name student:	

Data internship organization	
Name organization:	
Name external supervisor:	
Date assessment:	

Internship Assessment <sup>1</sup>	O	T	V	G	Z
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1. The process: performance of the internship project					
- the complexity of the project					
- the manner of working (independence, initiative, enthusiasm, punctuality, consistency, creativity)					
- adherence to the schedule (has the student produced the required products and/or reports on time?)					
- attitude and general conduct (has the student observed the house rules of the host organization, and has contact with management and colleagues been satisfactory?)					
-insight into the organization					
- the quality of the resulting product(s)					
<b>Overall assessment of process</b>					

## 2. The written report

- quality of analyses, conclusions and argumentation

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- structure (introduction, main body, conclusion)

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- technical aspects (layout, presentation, style and correct use of language)

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**Overall assessment of the written report**

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## 3. Presentation

- grasp of subject matter

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- explanation of essentials

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- response to questions

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- of AV aids (overhead projector, beamer, etc.)

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**Overall assessment of the presentation**

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## 4. Summary final judgment about the stage

**Final judgment**

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O = inadequate; T = borderline; V = adequate; G = good; Z = Extremely good

**Overall impression and any comments concerning the intern / internship**

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Did you discussed the contents of this form with the intern?

yes

no

### Evaluation of the master Business Analytics

Do you have suggestions - based on your experiences - regarding:

Information and guidance from the master:

The curriculum of the master:

If knowledge of the trainee was not complete, can you indicate which subjects the student have too little knowledge?

How do you in general assess the connection between the master Business Analytics and the labor market?

### Comments

This assessment form can be mailed / sent to the VU supervisor and eventual also to the internship coordinator Mathematics and Computer Annemieke van Goor: [h.j.m.van.goor-balk@vu.nl](mailto:h.j.m.van.goor-balk@vu.nl).

**Thank you for your cooperation**

## Appendix 2:

### Assessment form VU University supervisor master project internship Mathematics / SFM

Name student:	
Student number:	
Name VU supervisor:	
Name VU second reader:	
Date assessment:	

Internship Assessment <sup>1</sup>	I	B	A	G	E
<b>1. The process: performance of the internship project</b>					
- the complexity of the project					
- the manner of working (independence, initiative, enthusiasm, punctuality, consistency, creativity)					
- adherence to the schedule (has the student produced the required products and/or reports on time?)					
- the quality of the resulting product(s)					
<b>Overall assessment of process</b>					

<b>2. The written report</b>					
- reporting mathematical aspects					
- quality of analyses, conclusions and argumentation					
- structure (introduction, main body, conclusion)					
- technical aspects (layout, presentation, style and correct use of language)					
- scientific criterion (reproducible and objective statements, and substantiate choices)					
<b>Algemeen oordeel over de schriftelijke rapportage</b>					

<b>3. Presentation</b>					
- grasp of subject matter					
- explanation of essentials					
- response to questions					
- presentation, inclusive the use of AV aids (e.g. beamer)					
<b>Algemeen oordeel over de mondelinge rapportage</b>					

<b>Grade for Mathematics /SFM internship (1 to 10)</b>	
Remarks and reasons:	

<sup>1</sup>I = inadequate, B = borderline, A = adequate, G = good, E = extremely good

<b>Signature VU University supervisor:</b>	<b>Signature VU University second reader:</b>