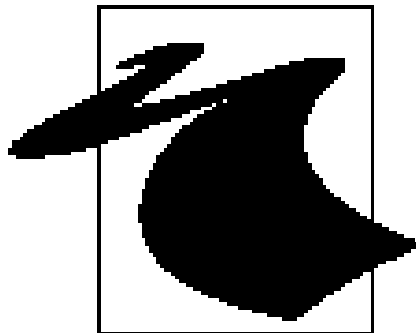


# Internship Brochure

**‘Towards professionalism’  
education through training 1 (bwl1)**



**hogeschool  
Leiden**

Date: 28<sup>th</sup> January 2009  
Version: 5.2  
Internship Coordinator: Marja Krosenbrink-Gruijters

## TABLE OF CONTENTS

|  |   |           |
|--|---|-----------|
| <b>1</b>   | <b><i>Introduction</i></b>  | <b>3</b>  |
| <b>2</b>   | <b><i>Definitions</i></b>   | <b>4</b>  |
| <b>3</b>   | <b><i>Internship prerequisites</i></b>                                  | <b>5</b>  |
| <b>4</b>   | <b><i>Assignment description</i></b>                                    | <b>5</b>  |
| <b>5</b>   | <b><i>The host institution</i></b>                                      | <b>6</b>  |
| <b>6</b>   | <b><i>Program of activities surrounding the internship</i></b>          | <b>7</b>  |
| 6.1  | Finding an internship   | 7         |
| 6.2  | The internship  | 7         |
| 6.3  | Poster presentation   | 8         |
| 6.4  | Conclusion  | 8         |
| 6.5  | Short overview of the internship supervisor's activities                | 8         |
| <b>7</b>   | <b><i>Documents to be submitted</i></b>                                 | <b>9</b>  |
| 7.1  | Internship plan   | 9         |
| 7.2  | Internship report   | 9         |
| 7.3  | Poster  | 10        |
| <b>8</b>   | <b><i>Assessment criteria</i></b>                                       | <b>10</b> |
| <b>9</b>   | <b><i>Are you interested in providing an internship assignment?</i></b> | <b>11</b> |
| <b><i>APPENDIX I: Competencies Bachelor of Applied Science</i></b> |   | <b>12</b> |
| <b><i>APPENDIX II: Example Internship Contract</i></b>             |   | <b>17</b> |
| <b><i>APPENDIX III: Internship Application Form</i></b>            |   | <b>23</b> |
| <b><i>APPENDIX IV: Evaluation Form</i></b>                         |   | <b>28</b> |
| <b><i>APPENDIX V: Report Criteria</i></b>                          |   | <b>30</b> |

## 1 Introduction

The discovery of the humane genome in 2001 has resulted in a silent revolution in the field of bioscience. Since then, research laboratories have been able to collect enormous amounts of biological data with relative ease, in which the analysis of these data by bioinformaticians is now obstructing the progress of the research. In the years to come, thousands of bioinformaticians will be needed in the Netherlands.

In 2003 Hogeschool Leiden initiated a fulltime four-year bachelor's degree program in Bioinformatics. In the bioinformatics curriculum, learning in and with a professional environment stands paramount. Starting in their second year, students work at school on assignments that are presented to them from the professional field. In the third and fourth years, a total of one year has been reserved for internship and graduation. This enables students to learn how to function as a bioinformaticist in the professional field. This is a very important part of the curriculum, because the professional field requires independent and creative professionals who are able to solve problems adequately in constantly changing situations. This requires insight into relevant professional situations, being able to assess the implications of specific actions and being able to reflect on your own abilities.

The Bioinformatics Department at Hogeschool Leiden showcases itself as a program where learning to adopt a professional attitude stands paramount. It is only then that one can obtain knowledge and expertise efficiently and effectively in relation to professional practice.

In this document, various aspects of the internship will be discussed to provide insight to both the student and the host institution providing an internship position.

Wherever in this document a person is addressed as 'he' it is meant to be understood as 'he' or 'she'. This also applies to the words 'his' or 'her'.

## 2 Definitions

|                             |  |
|-----------------------------|--|
| The curriculum              | The course of studies presented by the Department of Bioinformatics at Hogeschool Leiden   |
| OER (CER)                   | The curriculum and examination regulations of the course of study. This prevails in case of ambiguity or contradictions as to the interpretation of this document.   |
| Internship                  | The period of 21 weeks (maximum of 26 weeks) in which at least 95 days work is carried out on the internship assignment subject. The exact start date can vary per person.   |
| Internship supervisor       | The person supervising the student at the company or institution where the student is carrying out his/her internship assignment.  |
| Internship contract         | Contract concluded at the commencement of the internship period between the student and his supervisor recording agreements concerning the internship.   |
| Internship coordinator      | The person coordinating the internships at the Bioinformatics department of the Hogeschool Leiden.   |
| Supervising lecturer        | The lecturer from Hogeschool Leiden supervising the student and holding the evaluation interviews.   |
| Internship application form | Form filled out by the student stating where he/she will be holding his/her internship and the assignment he/she will be completing. This form is submitted to the student's mentor for approval.  |
| Internship plan             | A plan of approach in which attention is paid to the description of the organisation where the student will be an intern, the content of the work carried out by the student, the learning objectives and the planning.                      |
| Host institution            | The company or institution where the internship will be held.  |
| Internship report           | All of the documents that were produced during the internship period, including (but not limited to) the completed and signed evaluation forms and a report with respect to the attainment of the previously determined learning objectives. |
| Student                     | The student enrolled in the Bioinformatics program at Hogeschool Leiden.   |
| Mentor                      | Lecturer at the Hogeschool Leiden who supervises and offers guidance to the student and approves the internship assignment.  |

### 3 Internship prerequisites

To be eligible for an internship the student must (also see OER):

- a) have been awarded at least 45 EC from the period after completion of the first-year exam in the major declared by the student and
- b) have completed at least three projects from the period after completion of the first-year exam in the major declared by the student satisfactorily

In addition, the internship assignment and the internship itself must have been approved by the student's mentor and a second lecturer. Only after this approval and the student is eligible for the internship, the student is allowed to start with his internship.

For an approval of an internship abroad, the internship and student should meet these requirements (in addition to the requirements described above):

- the student needs approval for his internship abroad from the head of the department
- the student has signed the "my safety" form and send this form to the internship coordinator

### 4 Assignment description

In the application form, the student must describe his individual internship assignment subject. The description must include the following points:

- a) the organisation,
- b) the activities to be performed,
- c) the competencies to be developed during this internship period,
- d) the nature and scope of the supervision

The content of the internship assignment and the internship itself must meet the following requirements:

- Individual assignment  
The student must be able to demonstrate the ability to function independently as a bioinformaticist. This is why the student is required to perform an individual assignment. If there are several students holding internships at the same organisation, the scope of the assignments must be clearly defined. These students will also be assigned different internship supervisors so that the students can be assessed individually.
- Biology Component  
The biology aspect of the assignment must be clearly presented in the internship assignment. This must also be reflected in the internship report.
- Informatics Component  
An informatics component must also be presented in the internship assignment. This must also be reflected in the internship report.
- Theoretical Framework

The internship assignment must be embedded in a (scientific) theoretical framework. In his internship report, the student must prove having read a sufficient amount of relevant scientific literature.

- Completed within the given term
- Head-tail  
The internship assignment must have a 'head' and a 'tail'. An internship can also encompass multiple assignments, as long as these can all be completed.
- Higher vocational level  
In performing his internship assignment, the student must be able to attain the competency level as described for an internship (see Appendix I and Paragraph 8). These competencies are based on the competencies described for the degree of Bachelor in Applied Science.
- Relevant within student's curriculum  
The internship assignment must be in line with the curriculum followed by the student. The student carries the responsibility for this himself. Evaluation of this will be done by the student's mentor.
- Available knowledge of bioinformatics  
There must be ample knowledge on the subject of bioinformatics within the organisation at which the internship is to be held (host institution) or the student must be able to approach an external bioinformaticist easily, so that the student can be provided sufficient guidance as to the content of his internship.

## 5 The host institution

To be assured of a successful internship for the organisation providing the internship, the student as well as for the bioinformatics program, a number of requirements must be met pertaining to the host institution. These requirements are (but are not limited to):

- a) an own workplace for the student that meets the Occupational Health and Safety Requirements,
- b) an internship supervisor within the organisation who is responsible for supervising the student (both on the content of the assignment as well as with organisation). The internship supervisor will have regular contact with the student and will participate in evaluation interviews.
- c) the internship supervisor will ensure commitment from the organisation as regards the internship and the internship assignment,
- d) this commitment will be recorded in an internship contract. The responsibility for concluding the internship contract lies with the student and the internship provider. An example internship/graduation contract has been included in Appendix II.

## 6 Program of activities surrounding the internship

### 6.1 Finding an internship

- 1) The student is responsible for finding his own internship. He can approach host institutions independently or he/she can consult a list of candidate host institutions compiled for the Bioinformatics department. This list can be found on blackboard in the *"Bioinformatics: internship and thesis"* course.
- 2) After consulting with his internship supervisor, the student will formulate his individual assignment and record this in the internship application form (Appendix III). This assignment will then be submitted for approval to the student's mentor, at least 4 weeks before start of the internship.
- 3) The mentor will then consult with a second lecturer about the internship assignment.
- 4) If the internship assignment is approved by both lecturers, it will be forwarded to the internship coordinator. The internship coordinator will appoint a supervising lecturer. If the thesis is not approved, the student's mentor will explain to the student how the internship assignment can be adapted or that a new internship assignment will be required.
- 5) The internship supervisor and the student will receive written confirmation regarding the approval status of the internship assignment. The moment a student can actually start his/her internship depends on when the student has completed the prerequisites mentioned in paragraph 3.

### 6.2 The internship

- 6) The student must inform the supervising lecturer as soon as he/she is ready to start his/her internship.
- 7) The internship plan must be submitted to the supervising lecturer and internship coordinator in week 4 of the internship period.
- 8) In the fifth or sixth week of the internship period, the internship supervisor, the student and the supervising lecturer will discuss the internship plan to make a definite record of the learning objectives, the planning, and the work to be carried out. **The student is responsible for scheduling this interview.**
- 9) After the first interview a definitive go / no-go decision will be made, at the recommendation of the supervising lecturer. This decision will be based on the internship plan. An appeal against this decision can be submitted to the internship coordinator and, afterwards, to the Examination Committee of the relevant department.
- 10) Halfway through the internship period (between the ninth and the twelfth week) a mid-term evaluation will be held. The (mid-term) evaluation form (see Appendix IV) must be sent to the internship supervisor by e-mail. The results of this evaluation will be assessed by the supervising lecturer. If desired by the internship supervisor/student or the supervising lecturer, an appointment can be scheduled to discuss the evaluation.

11) The internship report must be digitally submitted in the penultimate week of the internship to the internship lecturer and internship coordinator. This report must be approved by the internship supervisor. The final interview and the evaluation will be based on this report. The final interview will be held within the period of internship. A provisional final mark for the internship will be awarded during this meeting.

### 6.3 Poster presentation

12) The student will make a poster about his/her internship and will present this at a meeting (organised 1-2 times a year) for all bioinformatics students, lecturers and internship supervisors. The poster must be digitally submitted to the internship lecturer and internship coordinator.

### 6.4 Conclusion

13) After the poster presentation, the definitive final mark will be awarded by the supervising lecturer. This mark will be communicated to the internship coordinator. The internship coordinator will then submit the final mark to Study Progress. The supervising lecturer will inform the internship supervisor of the student's final mark.

### 6.5 Short overview of the internship supervisor's activities

| week   | event  | tasks   |
|--------|--|---|
| 1      | <i>start date of internship</i>  |   |
| 4      | <i>student submits internship plan to supervising lecturer and internship coordinator</i>  | <i>help the student with formulating his plan of approach</i>   |
| 5 or 6 | <ul style="list-style-type: none"> <li>▪ <i>supervising lecturer visits the host institution (if this is in the Netherlands).</i></li> <li>▪ <i>supervising lecturer telephones the internship supervisor and the student (if the internship is not held in the Netherlands).</i></li> </ul> | <i>interview</i>  |
| 11     | <i>reception of evaluation form</i>  | <i>fill in and return the form</i>  |
| 20     | <i>student submits internship report + poster to supervising lecturer and internship coordinator</i>   | <i>assist the student in writing the report and making poster. Approval of the report and poster.</i> |
| 21     | <ul style="list-style-type: none"> <li>▪ <i>supervising lecturer visits the host institution (if this is in the Netherlands).</i></li> <li>▪ <i>supervising lecturer telephones the internship supervisor and the student (if the internship is not held in the</i></li> </ul>               | <i>complete evaluation form before the interview with the supervising lecturer is held.</i>           |

If any unforeseen circumstances should arise, an appeal can be made to the supervising lecturer, in second place to the internship coordinator and in third place to the Examination Committee of the relevant department.

## 7 Documents to be submitted

### 7.1 Internship plan

The internship plan (approved by the internship supervisor) must be submitted to the supervising lecturer no later than 4 weeks after commencement of the internship. This plan, which could be called a plan of approach with respect to education through training, will call attention to at least the following subjects:

Organisational aspects:

- Student's details
- Details of the host institution
- Details of the internship supervisor
- Details of the supervising lecturer
- Details of the internship itself

Description of the organisation:

- Problem definition
- Concrete assignment description
- Work to be performed
- The competencies to be developed during this period
- Detailed planning
- Activities not immediately related to the subject
- Risks and coverage of these risks
- The nature and scope of the supervision

This internship plan will be the subject of discussion during the first interview between the internship supervisor, the student and the supervising lecturer.

### 7.2 Internship report

The internship report (approved by the internship supervisor) must be submitted to the supervising lecturer no later than one week before termination of the internship. This report must have the format of a scientific paper, namely:

- 1) Summary
- 2) Introduction
- 3) Materials & Methods
- 4) Results
- 5) Conclusion & Discussion

Appendix V contains a detailed description of the requirements that the report must meet. If desired by the student and the internship supervisor, the report may be written in the English language. Just as in a report written in the Dutch language, the report must be written using grammatically correct language. The internship supervisor is responsible for offering support to students writing their report in English.

### **7.3 Poster**

The poster presentation will be organised at least 1x per year. The student submits the digital version of the poster to the supervising lecturer and internship coordinator.

## **8 Assessment criteria**

During the internship, the internship supervisor will be able to evaluate the student's performance twice: after 11 weeks and after the internship assignment has been completed. The assessment criteria required of a student are as follows:

- The student is able to complete a relatively simple assignment from the professional field of bioinformatics independently and/or within a multidisciplinary team.
- Under supervision of the internship supervisor, the student can work on a complex bioinformatics assignment from the professional field.
- The student is able to approach this assignment on a project basis and by working in a solution-oriented manner, can collect the required information from recent (scientific) sources and can discuss the results within a multidisciplinary team.
- The student can function as part of a multidisciplinary team and can communicate with different professionals within the organisation.
- The student can store his data and make this data easily accessible to professionals and others within the organisation.
- The student can describe results in a report comprising an introduction, materials & methods, results & discussion.
- The student is able to present these results to bioinformatics students and lecturers in a poster presentation.

The documents should be submitted in time to the internship lecturer and internship coordinator. For the individual documents, the following deadlines are established:

- Internship plan: 4 weeks after start internship
- Internship report: 20 weeks after start of internship. When 26 weeks after start the internship no report has been submitted, the mark 1 will be awarded.
- Poster: 20 weeks after start of the internship. When 26 weeks after start the internship no report has been submitted, the mark 1 will be awarded.

When the report and/or poster have not been submitted after 26 weeks, the mark "1" will be awarded. Approval for delay of submission of the report, poster and plan can be obtained from the Examination Committee ([bioinformatica.examencommissie@hsleiden.nl](mailto:bioinformatica.examencommissie@hsleiden.nl)).

After an unsatisfactory mark (5 or lower) has been awarded (when the report has not been submitted or has been awarded with an unsatisfactory mark), the student has only one change to achieve a better mark for this internship assignment. The deadline for submitting plan, report and poster will be determined by the internship lecturer and internship supervisor and will be reported by mail to the internship coordinator. When the student fails to submit the report and/or poster before the deadline or his work has been awarded with a 5 or lower, the student has to complete the entire internship period once more in another environment (read: another internship position).

## **9 Are you interested in providing an internship assignment?**

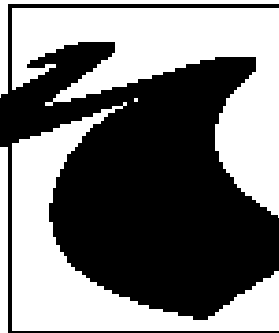
Please send a note including your name, e-mail address and several key words summarising your research to [krosenbrink.m@hsleiden.nl](mailto:krosenbrink.m@hsleiden.nl). Your details will then be added to the list of candidate host institutions. If a student is interested in carrying out an internship under your supervision, he or she will contact you.

If you have any questions, please contact the internship lecturer or internship coordinator Marja Krosenbrink-Gruijters, [krosenbrink.m@hsleiden.nl](mailto:krosenbrink.m@hsleiden.nl), telephone number +31-71-5188561.

# **APPENDIX I**

## **Competencies Bachelor of Applied Science**

**Required level for participation in an  
internship program.**



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Information in this appendix has been taken in part from the document "Bachelor of Applied Science: a competency-oriented profile description" dated 22 March 2007.

## Appendix I: Competencies bachelor of Applied Science

Agreements in the field of higher education at European level were concluded in Bologna in 1999 that, in the past few years, have led to substantial reforms. To create flexible international academic curricula, the Anglo-Saxon Bachelor – Master (BaMa) structure was adopted, as well as a common system of titles for all member states. A common system of recognisable titles will be conducive to promoting the employability of university graduates in a globalising economy. A common European credit system was also adopted: the European Credit Transfer System, with one ECTS credit representing 28 hours of study.

In the Netherlands, a start was made in 2002 by incorporating the bachelor-master structure into both higher vocational training (HBO) and university education (WO). This change gave rise to reforms in the existing educational system and also served to simplify their structure. In technical higher vocational education, where a total of some 40 different degrees could be obtained, the Netherlands Association of Universities of Applied Sciences (HBO-raad) HTNO and the corresponding advisory board took it upon themselves to expand the possibilities for the existing educational programs. At the recommendation of the HTNO working group for the expansion of bachelor programs, the Netherlands Association of Universities of Applied Sciences (HBO-raad) introduced four bachelor programs in 2003 and requested that the Universities of Applied Sciences (in Dutch: Hogescholen) classify their programs accordingly: Bachelor of Engineering, Bachelor of Built Environment, Bachelor of Information and Communication Technology or Bachelor of Applied Science.

The Bioinformatics program at Hogeschool Leiden is categorised as Bachelor of Applied Science. The competencies for the Applied Science program have been formulated based on the existing national professional and educational profiles. The profile for the Applied Science program consists of eight competencies, of which seven are applicable to the field of bioinformatics. The seven competencies according to Domain of Applied Science (DAS) are described below.

### 1. Research

The Bachelor of Applied Science can conduct research within the field of Applied Science that will either contribute to the solution of a problem or will lead to greater insight into a topic within the own working environment.

The student can demonstrate this by:

- a. demonstrating an adequate level of expertise by being able to find and analyse problems in the field of science;
- b. being able to formulate the objectives of a desired research project by taking the questions as point of departure;
- c. being able to select and obtain (scientific) literature independently in order to gain in-depth understanding of a problem and subsequently being able to assess the reliability of various different sources of information;
- d. being able to set up a feasible and sustainable plan of work (including budget) in which thought has been given to the quality control, safety, health, well-being, the environment and ethics;
- e. being able to carry out, or have carried out, the plan of work systematically by using relevant models, working methods and equipment;
- f. being able to work together within a multidisciplinary team;
- g. being able to summarise, organise and interpret the results in the context of the research topic;
- h. being able to report the results of the research in accordance with the prevailing professional standards;
- i. being able to propose follow-up research projects based on the obtained results;

**2. Experiments**

The Bachelor of Applied Science is able to conduct experiments within the field of Applied Science and to obtain demonstrably reliable results.

The student can demonstrate this by:

- a. adapting a research topic into an adequate experimental plan including operating procedures;
- b. demonstrating adequate level of knowledge, insight and skill to carry out work in a responsible, safe and critical manner incorporating the correct methods, techniques and equipment;
- c. working to acquire more in-depth knowledge independently with respect to methods and backgrounds (including the possibilities and limitations of certain equipment);
- d. being able to comply with working procedures meticulously and to adapt them if necessary, so that demonstrably reliable and reproducible results will be obtained;
- e. being able to comply with safety, health, environmental and hygienic standards and conducting experiments in as sustainable a manner as possible;
- f. being able to apply (statistic) methods in order to process/validate results and to guarantee their standard of quality;
- g. being able to report the results of the research according to the professional standard;
- h. being able to propose follow-up experiments based on the obtained results;
- i. being able to reach the intended objective by applying project planning.

**4. Managing/coordinating**

The Bachelor of Applied Science can develop, implement and maintain a (data) management system in the field of Applied Science or components thereof, so that the system will meet the requirements with respect to the law and legislation, standard of quality and the values and standards of the organisation.

The student can demonstrate this by:

- a. being able to analyse possible problems with respect to the development, operation and maintenance of a (data) management system;
- b. being able to set up, operate and evaluate a plan of improvement that can be used to solve problems in a creative, structured and economically sound manner;
- c. taking into account law and legislation and (internationally) applicable values and standards, especially with respect to sustainability and reliability;
- d. being able to coordinate activities with respect to the development, implementation and maintenance of the (data) management system (or components thereof);
- e. being able to report and present information according to the applicable professional standards;
- f. being able to inform employees adequately about the content and applicability of the (data)management system and any possible modifications.

**5. Providing advice about sales/purchase**

The Bachelor of Applied Science is able to provide substantiated advice about the design, improvement and applicability of products, processes and methods and can conclude profitable transactions with respect to products and services within the field of Applied Science.

## Appendix I: Competencies bachelor of Applied Science

The student can demonstrate this by:

- a. adopting a service-minded attitude;
- b. being able to explain questions posed by the principal;
- c. being able to set up and conduct (market) research;
- d. being able to formulate (partial) recommendations;
- e. being able to translate demands/questions made by clients into feasible solutions or recommendations in consultation with researchers and developers;
- f. being able to maintain relations with clients in an adequate manner;
- g. being able to formulate (parts of) marketing plans;
- h. being able to make use of negotiating tactics in purchase and sales.

### 6. Instructing/supervising/teaching/coaching

The Bachelor of Applied Science can instruct and supervise employees and clients to help them obtain new information and skills in the field of Applied Science.

The student can demonstrate this by:

- a. being able to compile theoretical introductions, instructions and demonstrations independently and presenting these to employees and students with respect to practical experiments, instructions for the use of equipment, materials etc.;
- b. being able to supervise employees or students in the field of methods and equipment in use, as well as being able to conduct a literature search for (practical) assignments;
- c. being able to apply didactic skills in various learning situations;
- d. being able to coach employees and teams in the development of their knowledge and expertise;
- e. being able to evaluate the results of the instructions, training and/or other learning.

### 7. Leadership/management

The Bachelor of Applied Science can provide direction and leadership in organisational processes and to employees involved in these in the realisation of certain objectives pertaining to the organisation department or project that he/she is supervising.

The student can demonstrate this by:

- a. having and demonstrating a philosophy with respect to the organisational department;
- b. being able to work in a systematic manner and on a project basis;
- c. being able to coach employees by inspiring, convincing, and motivating them; by showing respect; by stimulating cooperation and by delegating tasks;
- d. setting a good example for his/her employees;
- e. instilling employees with a feeling of shared responsibility;
- f. being able to chair meetings and work consultations;
- g. being able to communicate so that the objectives and tasks are clearly defined;
- h. being able to manage a project in terms of time, money, quality, information and organisation.

### 8. Self-regulation

The Bachelor of Applied Science is able to regulate himself and, in his development, ensures that he is abreast of recent developments as regards skills and knowledge, also in relation to ethical dilemmas and social values.

## Appendix I: Competencies bachelor of Applied Science

The student can demonstrate this by:

- a. being able to determine learning objectives and strategies, to implement these and to be able to analyse these in relation to the learning objective;
- b. being able to adapt himself to changing working environments;
- c. being able to make choices with respect to professional and ethical issues and to attain a decision based on the accepted standards and values;
- d. being able to receive and give feedback;
- e. being able to evaluate, account for and incorporate his/her own thoughts and actions.

Consequently, levels to measure the extent of these competencies are described below:

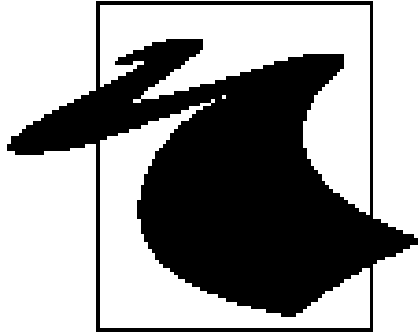
| Level | Description   |
|-------|---|
| I     | Being able to demonstrate effective behaviour as the environment demands.<br>Key words: carry out, at the order of  |
| II    | Being able to demonstrate effective behaviour at one's own initiative.<br>Key words: solving, analysing   |
| III   | Being able to inspire effective behaviour in others working in the direct environment, mainly by setting a good example.<br>Key words: integration, development, transfer of knowledge and expertise                    |
| IV    | Being able to inspire the effective behaviour of others working within the organisation and, in doing so, increasing the level of competency within the organisational (department).<br>Key words: generating knowledge |

During the internship, the student must attain the following levels:

|            |               |              |            |               |              |                   |
|------------|---------------|--------------|------------|---------------|--------------|-------------------|
| 1          | 2             | 4            | 5          | 6             | 7            | 8                 |
| 3 Research | 3 Experiments | 2 Management | 2 Advising | 2 Instruction | 1 Leadership | 2 Self-regulation |

# **APPENDIX II**

## **Example of an internship contract**



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This internship contract was compiled by the council of institutions offering training at Higher Vocational level.

## Dutch Student – Trainee Agreement PART I

- A copy of the passport of the student-trainee must be attached to this form
  - This form must be present at the address where the internship is fulfilled
- 

### Personal information international student

Family name

First name

Date of birth

day/month/year

Place of birth

Citizen of

Is a residence permit required?

Yes/No

Dutch residence permit number

Is a copy of the passport attached? Yes/No

Telephone

E-mail

Home address during the internship

Telephone

### Information Dutch educational institution

Name of educational institution

Address

Telephone

E-mail

Unit of educational programme (e.g. faculty)

Name of Educational Supervisor

Telephone

Fax

E-mail

**Information host organisation**

Name of host organisation

Internship address for student-trainee during the training period

Telephone

Fax

E-mail

Name of on-site Supervisor

Telephone

Fax

E-mail

**Internship agreement**

**Article 1: Objectives and tasks of the internship**

- The purpose of this internship is to provide the student with experience of the practical application of theoretical knowledge he or she has already acquired and to acquire new skills and knowledge. The host organisation and the educational institution will ensure that the student-trainee is given tasks and responsibilities according to the level of competence of the student and the educational objectives for the training period. This agreement therefore is not an employment contract.
- **Educational objectives:** skills and knowledge to be acquired, defined by the Educational Supervisor.

- **Tasks of student-trainee:** responsibilities in order to meet these objectives, defined by the on-site Supervisor in consultation with the Educational Supervisor.

**Article 2: Supervision and evaluation**

- The educational institution (or unit of educational programme like a faculty) will assign an Educational Supervisor responsible for the student's internship and the host organisation will name an on-site Supervisor. If any problems arise, the on-site Supervisor will contact the Educational

Supervisor.

- At the end of the internship the educational institution requires a report from the student-trainee, the detailed requirements for this report will be available to the student before the internship begins. The host organisation will be presented a copy of this report.
- The host organisation will provide the student-trainee with an evaluation of his or her internship as well as a written confirmation that the scheduled work programme has been undertaken and completed.
- 

### **Article 3: Internship arrangements**

- The number of envisaged ECTS points for the internship:
- The training period will take place excluding the (parts of) days that the staff of host organisation is not working:  
from  to
- The daily schedule of working hours of the host organisation applies to the student. The minimal hours per week of internship will be:
- Student-trainee will not be present at the host organisation on:
- The student-trainee must comply with all the regulations of the host organisation.
- The compensation for expenses per month will be:
- The compensation for travel expenses will be:
- The host organisation offers the necessary facilities for the student-trainee to execute his tasks and achieve his/her objectives.
- The student-trainee is obliged to apply secrecy to his or her activities during the internship at the host organisation if requested by the host organisation.
- The author's rights on the achieved results lie with the student-trainee if not explicitly regulated otherwise. Both the student-trainee and the Dutch educational institution may use the results for internal purposes without consultation of the host organisation..
- The written internship report must be presented to the on-site supervisor before it is handed in to the educational supervisor.

### **Article 4: Social protection / Insurance**

- The host organisation will protect the student-trainee against any form of intimidation or discrimination at the workplace. The principle of equal rights will prevail.
- According to Dutch law (art. 7:658 lid 4 *Burgerlijk Wetboek*) the host organisation is liable for injuries and damage that the student-trainee may suffer from during his/her internship.

- The student-trainee will make sure that an insurance is concluded for accidents and liability in the workplace by either the host organisation or the student-trainee itself according to Dutch law.

Accidents insurance number

Liability insurance number

#### **9.1.1.1 Article 5: Dispute**

The student-trainee addresses the on-site supervisor of the host organisation in the first place in case of a dispute. If the dispute cannot be settled amicably between the student-trainee and the on-site supervisor it will be presented to the educational supervisor in order to try to reach a solution suitable to all parties.

#### **Article 6: End and ending of the internship**

1. The internship ends
  - a After the period agreed in article 3.
  - b If the student-trainee ends his study at the Dutch educational institution.
  - c If all parties agree to end the internship.
  - d If the student-trainee dies.
  - e If the host organisation is bankrupt or will be dissolved.
2. The host organisation can end this agreement, having heard the student-trainee and educational supervisor :
  - a If the on-site supervisor concludes that the student-trainee is not following the rules of the host organisation or the directions of the on-site supervisor.
  - b If the student-trainee does not comply with the regulations with regard to secrecy as agreed upon in article 3.
  - c If the student-trainee acts in a way that a host organisation cannot be requested to accept according good reason.

The on-site supervisor informs the educational supervisor about any ending of the internship.

3. The educational institution can end this agreement, having heard the educational supervisor, the student-trainee and the on-site supervisor if the educational institution concludes that the internship is not complying with the educational objectives and/or the tasks laid out in this agreement or the student-trainee cannot be requested to deal with issues according to good reason. The educational supervisor informs the on-site supervisor about any ending of the internship.

#### **9.1.1.2 Article 7: General provisions**

1. Deviations from the articles in this agreement must be agreed upon in writing by the educational supervisor, the student-trainee and the on-site supervisor.
2. This agreement will be governed by Dutch law.

### **Signatures**

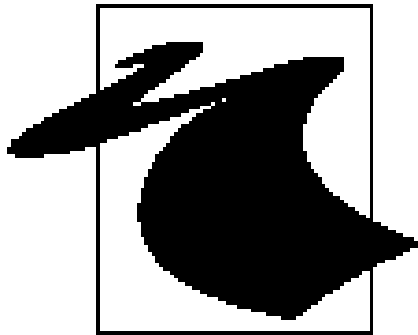
## Appendix II: Example Internship Contract

The signatories confirm the accuracy of all statements made on this form and agree to all principles and articles expressed therein.

- Name of educational institution  
  
Signature, stamp and date
  - Name of host organisation  
  
Signature, stamp and date
  - Name of international student  
  
Signature and date
-

# **APPENDIX III**

## **Internship application form**



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## INTERNSHIP APPLICATION FORM

**Informatics of computer science: iwl2 / iwl3 \***

**Bioinformatics : bwl1 / bwl2 \***

**Name :**

**Student nr. :**

**\* cross out what is not applicable.**

**ALL INTERNSHIPS MUST BE APPROVED BY YOUR MENTOR VIA THIS FORM.  
AFTER IT HAS BEEN APPROVED, SUBMIT THE SIGNED FORM TO THE  
INTERNSHIP/GRADUATIONCOORDINATOR.**

**STUDENT DETAILS**

Name :  
Address :  
City/Town :  
Telephone :  
Mobile :  
School email :  
Personal email :  
Class :  
Student nr. :

**INTERNSHIP DETAILS**

Host institution :  
Name internship supervisor :  
Name of contact\* ) :  
Department :  
Address :  
Postal code and city :  
P.O. Box :  
Postal code and city :  
Telephone :  
Mobile :  
E-mail internship supervisor :  
URL :  
Country :

\*) if other than internship supervisor

**THE INTERNSHIP:**

Starting date :  
End date :  
Hours per week :  
Location of the work :  
Email-address host institution :

**If this does not concern a first internship, the following details are also required:**

Previous host institution :  
Previous internship period :  
Previous internship :  
Previous internship activities :

**Provide a brief description of your host institution:**

**Provide a brief description of your internship assignment, as formulated by your host institution:**

**Provide a description of the scope and nature of the activities to be performed for satisfactory completion of the assignment:**

**Appendix III: Internship Application Form**

**TO BE COMPLETED BY THE FACULTY:**

**Mentor  
Name:**

**Approved:**    yes/no  
**Signature:**

**Date:**

**Remarks:**

**Internship coordinator  
Assigned supervising lecturer:  
Signature:**

**Date:**

**IF INTERNSHIP/GRADUATION IS ABBROAD:**

**HEAD OF FACULTY**

**Approved:** yes/no  
**Signature:**

**date:**

**Remarks:**

**TO BE COMPLETED BY THE FACULTY:**

**Registration number host institution:  
Registration number internship:  
Processing in internship data base: (date)**

**Copy of form for mentor: (date)  
Copy of form for student: (date)**

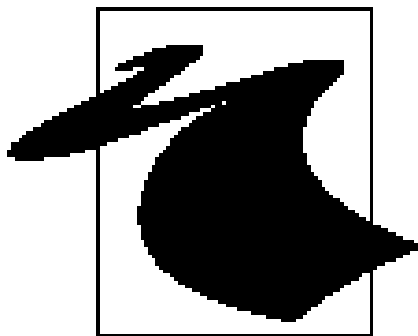
**Second lecturer  
Name:**

**Approved:**    yes/no  
**Signature:**

**Date:**

# **APPENDIX IV**

## **Evaluation form**



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## Appendix IV: Evaluation Form

|  |  |
|--|--|
| Student (name + number)                |  |
| Host institution (name)                |  |
| Internship/thesis supervisor           |  |
| Date                                   |  |
| Course code (iwl2 – iwl3 - bwl1 -bwl2) |  |
| Evaluation type                        | Mid-term evaluation / Final evaluation |

This form is used during the mid-term and final evaluation of the internship and the thesis. It is completed by the supervisor and discussed with the student and the lecturer. The marks have been assigned the following values:

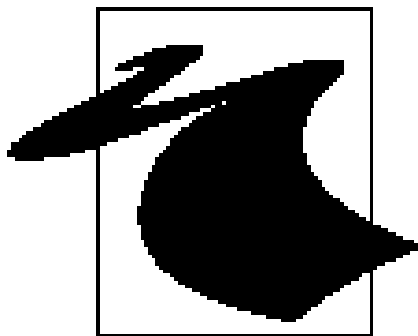
1 = poor, 2 = mediocre, 3 = satisfactory, 4 = good and 5 = excellent.

x = unknown, not applicable or not assessable.

| Component   | 1 | 2 | 3 | 4 | 5 | x | Remark(s) |
|---|---|---|---|---|---|---|-----------|
| <i>Insight</i><br>- can settle in quickly<br>- planning and organisation;<br>- decision-making  |   |   |   |   |   |   |           |
| <i>Communication</i><br>- listening<br>- formulating ideas<br>- contact with employees<br>- contact with management<br>- cooperation<br>- attitude towards criticism<br>- writing skills<br>- documentation |   |   |   |   |   |   |           |
| <i>Characteristic</i><br>- being able to motivate/convince<br>- development of initiatives<br>- putting forth own ideas<br>- creative<br>- helpful<br>- independent   |   |   |   |   |   |   |           |
| <i>Accuracy/punctuality</i><br>- meeting commitments<br>- analytical capacities<br>- input/working pace<br>- critical of own performance  |   |   |   |   |   |   |           |
| <i>Other</i> (professional knowledge and skills):   |   |   |   |   |   |   |           |

# **APPENDIX V**

## **Report Criteria**



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## Writing a report: an overview

### **General**

A report, just like a presentation, is a way to communicate to others about the work/research you have just carried out. A report has a similar function to that of a paper and, as such, makes use of the same organisational structure. The difference between a report and a paper is that a paper can only be written once the research question has been answered, and that a report provides an account of an experiment or an internship. This is why a report can also describe negative research results.

When writing a report it is essential to bear in mind that it will be read by others and that, to accommodate the reader, it must therefore be written in an easily accessible manner. This can be attained by:

- writing as shortly and succinctly as possible, leaving out unnecessary information; reconsidering every sentence/word as to whether or not it really needs to be written down;
- trying to avoid complex sentences;
- guiding the reader through the report; explaining relationships between different texts clearly and indicating your reasons for performing experiments;
- avoiding too many passive sentences; using active sentences whenever possible (NOT: in this report is described...BUT: This report describes research in which...);
- no spelling or grammatical errors. All of the above will detract from the content of your report.

Furthermore, it is unconventional to use *we//one* in a sentence (NOT: I have investigated...; BUT: This report describes research in which...);

### *Other tips:*

- Once you have written a text, it is difficult to see your own mistakes. This is why it is helpful to put your text or report away for a day or two before reviewing it;
- Read your report out loud: you will notice whether or not the sentences run well;
- Ask a fellow student to read your report and to give you some feedback;
- Ask your supervisor if he/she will read your draft.

### **Structure of a report**

A report must contain the following parts:

- Summary (Abstract)
- Introduction
- Materials and Methods
- Results
- Discussion
- References

### **Graphs and tables**

Include graphs and tables to display your results. Pay attention to the following:

- Number the graphs and tables, provide them with a title and a brief description (not always necessary);
- Designate axes and units.

### **Content: elaboration**

The objective, content and manner of every part of the report will be described below.

- Summary (Abstract)

*Objective:* Provides the reader with an idea about the content; will it be interesting to him/her? So: keep it short and succinct.

*Content:* Research question, method of answering, results, conclusion.

*Language:* Use the present tense.

*Tip:* Write the summary last!

- Introduction

*Objective:* Indicate your reasons for conducting this research.

*Content:* The most important thing you need to describe here is the research question. Provide a short introduction about the topic and the relevant literature.

*Language:* Use the present tense.

*Tip:* Start with the introduction, so that you are fully aware of why you are conducting this research and the results that are important for your report.

- Materials and Methods

*Objective:* Describe how you have gone about answering your research question.

*Content:* Describe 'what' you have used for your analyses (which programs, but also which biological material) and how these analyses and experiments were conducted. Do not compile a logbook, but describe the big picture (not step-by-step). NOT: Opened Excel, selected data, then filtered data with an auto filter with a log<sub>2</sub> Cy3/Cy5 value higher than 2.5. Then selected all log<sub>2</sub> Cy3/Cy5 values smaller than -2.5. These data were then copied to a new file. BUT: Genes were considered differentially expressed if the log<sub>2</sub> Cy3/Cy5 values were greater than 2.5 or smaller than -2.5.

*Language:* Use the past tense.

*Tip:* Write the Materials & Methods while you are conducting the research/experiments. This will help you to write it faster.

- Results

*Objective:* Describing your results.

*Content:* Describe the results of your experiments/analyses. In these results you may also describe experiments that were not successful. If you have any graphs or tables, you can describe the data according to these graphs and tables (refer to them in your text). DO NOT PROVIDE A CONCLUSION YET!

*Language:* Use the past tense.

*Tip:* To guide your reader through the text and to make it easy to read, people often mention how an experiment has been conducted or their reasons for conducting this particular experiment.

- Discussion

*Objective:* Answering the research question.

*Content:* Discuss the results of your experiment and draw up conclusions. Discuss the 'weak spots' in your experiment that have influenced your conclusion. Compare your results with the results you have gathered from experiments taken from literature. Do these serve to reinforce your own conclusion or does this call new questions to the foreground? If this requires new experiments in order to answer your research question, mention these. For negative results, discuss the (possible) causes.

*Language:* Use the present tense as often as possible.

*Tip:* Write the discussion after the results, introduction and materials & methods. Literature that was discussed in the introduction can now be discussed again.

- References

The list of references consists of all the (scientific) papers and books that were used during your research. You have already referred to these papers in your text. The list of references can be built up in two ways: alphabetically (based on the surname of the 1<sup>st</sup> author) or by number. The format you choose will influence the way in which you use references in the text.

*Alphabetically:*

In the text of your report, mention the surname of the 1<sup>st</sup> author and year of publication after a conclusion based on a paper. If a report has been written by more than one person, write (in italics!) *et.al.*.

Example: Ovaries taken from homozygote AMH *null* mice contain fewer primordial and more growing follicles than the control ovaries (Durlinger *et.al.*, 1999).

If this concerns a review, please mention this in your text.

Example: Members of the TGF $\beta$  super family transmit signals via transmembrane serine/threonine kinase type I and II receptors (reviewed by Miyazono *et.al.*, 2001).

Papers in the reference list can be listed in various ways. For all the possibilities, consult articles with similar reference lists. The following is frequently used:

Surname author initials author, surname author initials author, ....etc.... and surname author initials author. Year of publication. Title of magazine (often abbreviated) volume (issue): start page-end page.

van Rooij IA, Broekmans FJ, Scheffer GJ, Looman CW, Habbema JD, de Jong FH, Fauser BJ, Themmen AP, Te Velde ER. 2005. Serum antimullerian hormone levels best reflect the reproductive decline with age in normal women with proven fertility: A longitudinal study. *Fertil Steril.* 83(4):979-87.

*Number:*

In the text of your report, now all you will have to mention after the conclusion drawn from a paper is a number. The number assigned to a paper is the order in which the paper appears in your report for the first time.

Example: Ovaries of homozygote AMH *null* mice contain fewer primordial and more growing follicles than the control ovaries (1).

Papers in the reference list are listed in order of numbering:

1. van Rooij IA, Broekmans FJ, Scheffer GJ, Looman CW, Habbema JD, de Jong FH, Fauser BJ, Themmen AP, Te Velde ER. 2005. Serum antimullerian hormone levels best reflect the reproductive decline with age in normal women with proven fertility: A longitudinal study. *Fertil Steril.* 83(4):979-87.

*Tip:*

- There are software programs (i.e. endnote) that will automatically create references in texts and reference lists (in part). Ask someone at your host institution about this.
- Use alphabetical numbers if you are compiling your reference list by hand. If you are using numbering, you may have to adjust the entire list if you chose to insert a new source article.