Student supervision guide*

Jaap-Henk Hoepman¹

Institute for Computing and Information Sciences (ICIS),
Radboud University Nijmegen, the Netherlands,
jhh@cs.ru.nl

Abstract. This guide is meant to clarify, both for you (my student) and myself, how I supervise and judge master assignments, internships ("stages") and design assignments.

1 Introduction

All assignments consist of a certain period of work in which a certain problem is being studied or a certain product is being made. The results of the assignment are documented in a report and are summarised in a presentation. Sometimes, a separate product (e.g. a piece of software) is delivered. Sometimes, assignments are done externally (at a company). Sometimes, assignments are worked on in a group.

I usually have some predertimed assignments available. If you want to take up one of these, that's great. If you have your own topic for an assignment, that's even better. Feel free to contact me and discuss your ideas.

2 Assignments and supervision

All three (or four) of the highlighted topics above are important. Here are some of the main points to think about.

2.1 (Formal) procedures


* Wed Oct 29 15:02:38 2014 +0100 / cc318e0 / student-guide.tex
2.2 Work

In the end, you are responsible for finishing the assignment. I expect you to make a realistic project plan as soon as the assignments starts. When I foresee serious problems, I will tell you. Likewise, I expect you to inform me when problems occur or may occur. Otherwise, I expect you to work independently. I am always available for questions, by mail, phone or face-to-face. Feel free to walk into my office for a chat, or a discussion.

Typically we will have one or two meetings a month to discuss progress and ask questions. You are responsible to schedule these meetings, make an agenda and take notes. If there is anything in particular you want to discuss, let me know beforehand, so I can prepare. If this requires some reading or reviewing, email me the documents at least a full working day before the meeting.

If you want me to review something, first carefully and critically read it yourself first.

2.3 Research plan

A good research plan is

- **relevant** it solves a genuine theoretical or practical problem, that you are motivated and well equipped to answer, and that has not been answered before.
- **well founded** it has a clear scope and is based on clearly expressed assumptions and a properly described state-of-the-art.
- **precise** it clearly states the main research question.
- **methodological** it clearly states the approach needed to answer the research question, the scientific method to be used, and the sub-questions to be answered.
- **functional** it contains a detailed project plan that makes explicit which resources are needed, what external resources (information, support, etc.) it depends on, the steps to be taken and the amount of time they will take.
- **consistent** the proposal as a whole is consistent and complete.

A good research plan provides convincing arguments for each of these aspects.

2.4 Report

It helps to make a skeleton of the final report early on in the assignment. It should contain chapter and section titles, each with a brief description of their final contents. Discuss this skeleton report with me. For master assignments I expect the report to be in English. For internships and design assignments I leave it up to you.

Use the web. It’s a great, albeit sometimes unreliable, source of information. But don’t just cut-and-paste: always use your own words. Clearly indicate quotes. Cite
your sources. Don’t overdo it: it is better to cite a few good papers and read them,

than to cite a lot you didn’t really read.

Make sure you deliver the draft final report in time, to allow me to read it thor-

oughly. Allow me one week to do so. Then write the final report\(^1\).

The university maintains a repository of bachelor and master theses, see http: //www.cs.ru.nl/bachelorscripties/index.html and http://www.ru.nl/ oii/onderwijs/afstuderen/vm/reports/. Browse those to get a feel for what

a proper report looks like. There are also default style files available at XXXX. Use

those.

There is additional information available at http://www.cs.ru.nl/~jhh/ guides.html.

2.5 Presentation

Assignments end with a presentation of about 30-60 minutes. This includes the time

for questions (either during the presentation or at the end). This means you will need

15-30 slides. You can use Powerpoint, Adobe acrobat (PDF), or the white board.

Don’t put too many words on one slide, and remember: pictures speak louder than

words. Tell more than what’s on the slide. Give examples of what you mean. Be

prepared for questions. Look the audience in the eye.

Invite other people (friends, colleagues, etc.) to be present. This makes the pre-

sentation ‘real’, and ensures you feel you actually tell somebody something new. Aim

your presentation at this — wide — audience.

There is additional information available at http://www.cs.ru.nl/~jhh/ guides.html.

2.6 Products

When writing software, remember that it may be used by others in the future (both

as an application or as a basis for further development). Hence, documentation is

of utmost importance. Stick to the following rules.

– Write a design document, that describes the structure of the software and doc-

uments the design choices.
– Write end-user documentation, that allows a tech-savvy person to use the soft-

ware.
– Document each variable and function declaration in the source — at the very

least the publicly accessible ones. For a function, briefly describe what it does,

list the purpose and contents of the parameters, and document the returned

result. Don’t forget error conditions. For Java, use javadoc.

\(^1\) Make sure there is time to do so.
– Catch errors, and give meaningful error messages. Don’t abort the program immediately. Try to repair the situation.
– Pick a coding style and stick to it. Use sensible variable and function names.
– Check the validity of the actual parameter values passed to non-private functions (e.g. range checks, null-pointers, etc.).
– Use assertions and logging. Offer the user the option to switch them on or off.

See also [Sta01].

2.7 Confidentiality

Assignments are not confidential.

3 Judgement

At the end of the project you will be graded for your work. The final grade can be one of the following.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Fail (&quot;onvoldoende&quot;)</td>
</tr>
<tr>
<td>6</td>
<td>With satisfaction (&quot;voldoende&quot;)</td>
</tr>
<tr>
<td>7</td>
<td>Average (&quot;ruim voldoende&quot;)</td>
</tr>
<tr>
<td>8</td>
<td>Good (&quot;goed&quot;)</td>
</tr>
<tr>
<td>9</td>
<td>Very good (&quot;zeer goed&quot;)</td>
</tr>
</tbody>
</table>

Table 1. Grades, and what they mean.

On average, most students will obtain a 7 as a final grade. If you’re heading for a 5, I will have told you much earlier…

3.1 Scoring

For external assignments, the opinion of the external supervisor is more important than my own. The final grade depends on your score on the following items.

For content and results:

**Competence** Choice and integrated use of useful scientific theories, methods, languages, and tools; adaptation or construction of scientific methods.
Scientific position, research skills Explicit presuppositions; perceptivity and creativity towards connections and new points of view; logic reasoning; systematic approach; dealing with a changing research process due to external circumstances; critical reflection.

Abstraction Use of models, and, if necessary, slight adjustments; working on various levels of abstraction, wherever possible mounting the concrete case.

Range Range, profundity, Master’s level (relative with regard to specialization), originality, innovation (with regard to scientific method or new context).

For the thesis:

Execution of hypothesis Explicit, (theoretically) substantive concerning content, relevant, precise, functional.

Topical content Introduction of adequate concepts, adaptation of methods.

Order of content Coherent, logically ordered, complete.

Argumentation, responsibility: In agreement with logics, methodology, proper underpinning.

Manner of writing Style of writing fits the research reports; objective, precise, logical, meticulous, division of main point and side issues; explanations are adequate.

Design/style Spelling and punctuation, editorial design, use of sources, design of specific components.

For the effort:

Preparation Handed everything in on time, prepared meetings, showed initiatives / agenda items.

Progress Independence, control, adjustment of goals; observing and solving problems of knowledge.

Communication Contact with supervisor.

Procedure Systematic, methodical, goal-oriented, collects feedback on products and method of working (also from others than supervisor), processing feedback.

For the presentation:

Content Argumentation, Coherence, Comprehensiveness: Complete, distinguish between main issue and side issues.

Form Structure: Logically ordered. Appeal: Interesting, lively, affiliation to audience, composition.

Presentation Interaction: contact with audience, dealing with questions. Presenting: Audibility, use of additional techniques devices.

References