

Per Flensburg

Master in Informatics

The Master of Informatics is given in co-operation with six universities in Sweden, member of a network called InformaticsNetwork Sweden (<http://informaticsnetwork.se>). The participating universities are marked by big blue and green dots on the map to the left. The blue ones are from north to south:

- Luleå Technical University in Luleå
- Miduniversity Sweden in Östersund (with campus in Härnösand and Sundsvall)
- University West in Trollhättan
- International Business School in Jönköping
- Växjö University in Växjö, also including Kalmar University
- Blekinge Technical University in Karlskrona
- Kristianstad University

The green dots are universities that have applied for membership (still from north to south):

- Umeå University in Umeå
- Halmstad University in Halmstad

Informatics Network Sweden is a network for co-operation within the higher education and research in informatics, with emphasis on adopting the technique to human and society needs. It is also a possibility for smaller universities and university colleges to get access to high scientific competence and research in a cost effective way. The gathered competence within the network far exceeds the competence within any single university in Sweden in the actual area. The co-operation take place at a no-cost basis, meaning the exchange of services in the long run will balance between the members. Hence, the network is very cost-effective and will form a strong part in the definition of the informatics area.



The informatics area in Sweden

Informatics has in Sweden a different meaning than for instance in Germany. In fig 1 there is a picture fetched from The Joint Task Force for Computing Curricula (2005), showing the relations between Computer Engineering, Computer Science, Software Engineering, Information Technology and Information Systems. The grey area indicates the informatics area, as we see it in Sweden. Most of the teaching within the area can be attributed to Information Systems, but during the 20's an increasing number of courses covers the IT-area.

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All the time there have been some courses (the number varies within the universities) belonging to software engineering.



Fig 1. The ACM definition of the whole computer science area. The grey area is informatics in the Swedish meaning.

Informatics was introduced 1967 in Sweden, but then it was called “Administrative Data Processing” and it was not until the middle of the 90s when it was commonly called “informatics”. To make it slightly more complicated, an area called “Informatics” was introduced already around 1980, but then covering the area of information science, computer assisted learning, information retrieval and similar. These areas are today included in the total informatics area.

Ever since the beginning of the 70s, there have been a strong emphasis on user and their role when developing information systems. This forms the base of the so-called Scandinavian School, which have achieved a very good reputation internationally. Today the area is called Participative Design. The Master of Informatics programme has its roots in the Scandinavian tradition of participatory design of technology, and has been developed within a pedagogical framework of work-integrated learning. An important feature of the programme is therefore a series of project oriented courses where the students are expected to do fieldwork and various forms of prototyping in connection with one or more work places, where theories and methods can be tested and contested. The aim is to provide opportunities for experiences which are relevant for future research, work and development of ICT in a multi-disciplinary context. It is also a multidisciplinary programme. It combines perspectives focusing on the social construction of technology in design and use with perspectives focusing on software engineering and ICT product design processes, and brings these perspectives together in exploring issues of relevance for theory and practice concerning ICT design. Through

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individual field studies of design practice and ICT in use, these different perspectives are combined, explored and forged into a broader and deeper understanding of ICT as part of everyday life and society.

Program structure

The program is organised in three levels, where the general conceptual structure is described in fig 2. The first levels are *courses*, which in this program usually covers 15 ECTS. The courses are divided into *moments* and each moment is divided into *parts*. In average a part is equivalent to one week full-time work or 40 study hours. For each part you have to do an assignment.

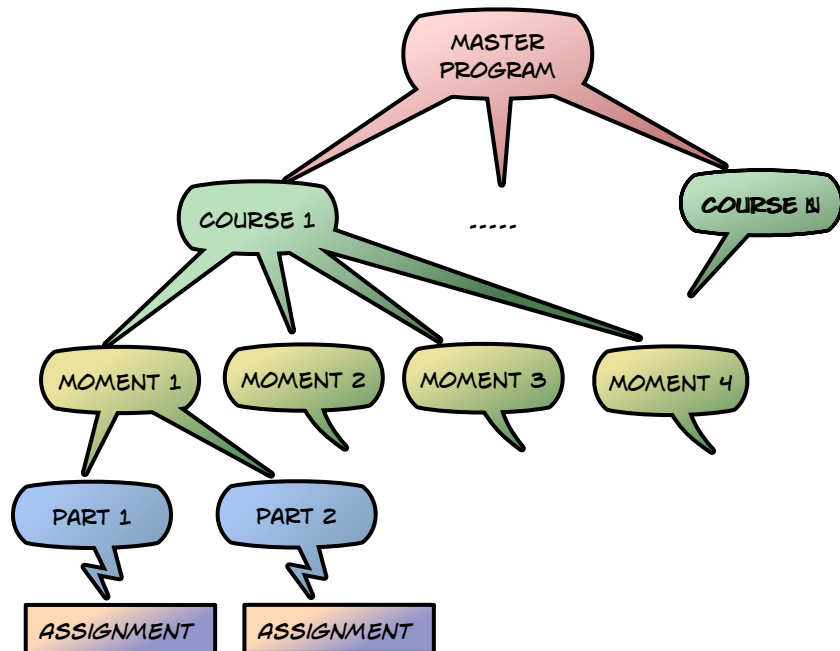


Fig 2. Conceptual structure of the program

The detailed course material, such as articles and lectures are assigned to the part. When you start on a new part you will have full access to the material, *but only when you have delivered the assignment for the previous part!* The reasons are twofold: First to give you feed-back in small pieces during the whole program and second to ensure that you actually do all the assignments! We drag you through the program and minimise your chances to fail.

Planning for a course where several teachers from different universities participate is a complex issue. Every teacher has his or her specific competence, which should be used within the context defined of the course. It is also a matter of planning in time, since every teacher also have other obligations, both for teaching but also within research and administration. Lets take an example. In the table below nine parts are allocated in time from left to right. A specific teacher is allocated to part 4.

Part 1	Part 2	Part 3	Part 4	Part 5	Part 6	Part 7	Part 8	Part 9

In this period the teacher has allocated a considerable amount of resources. Some resources can be allocated before and after the course. In practice this means that if you not deliver the assignment in time it will take longer time to grade it. Eventually you will have to wait until the end of the semester! It is also important that you have delivered the previous assignments

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in due time. If you for instance deliver the assignment to part 3 in the period where assignment 5 is scheduled, you will have limited access to the teacher in that period. The material on the web should be sufficient, but all experience indicates you will pass much easier if you take active part in the discussions, both with the teacher and your class-mates that take place. This is not possible if you are late.

The program is provided in two versions: One covering only one year and the other covering two years. If you want to receive an international Masters degree you have to choose the two-year-version. If you apply to and complete the one-year-Informatics program you are eligible to apply for the second year of the Master of Informatics programme, if you wish to continue studying after finishing the one-year-programme.

The teaching years starts around Sep 1st and ends the first week in June. It is divided into two semesters. The autumn semester ends about Jan 20, when the spring semester starts. The exact dates vary from year to year dependent on week-ends. Below you see the course allocation for both of the programs.

One year programme

Autumn	Spring
Fundamental IS Issues	e-Culture
Design Theory & Design Research	Master thesis project

Two year programme

Autumn	Spring
Fundamental IS Issues	e-Culture
Design Theory & Design Research	Work-Integrated Learning
Autumn	Spring
Communication in Learning Organisations	Master Thesis Project (30 ECTS)
Reflection-in-action/trainee course	

As you see, three of the courses in the one year programme are the same as the courses in the two year program.

The courses are given on half-time basis, so those of you who are studying full time have to read two courses in parallel.

Pedagogic

The program is in total given via internet and no face-to-face contact is needed – even if we should be very happy if you suddenly knock at our doors! Teaching is carried out in the form of video-recorded and/or mp3 transmitted lectures, and seminars, discussions and

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supervision offered via the Internet. You are expected to be able to work both individually and in groups, depending on the type of assignments within each course. Group assignments are normally carried out by co-operating at a distance through the digital learning platform and other available supportive technologies. Individual and group experiences of computer support for co-operative work, gained in this way during different courses, are reflected on within the framework of the education, and may thus offer inspiration for further research as well as future development projects.

A typical structure for a part is the so called blog reflection, described in Svensson & Östlund (2007):

The overall purpose is for students to reflect and discuss on a common reading assignment. The first activity is streamed video-vignette which introduces and problematize central themes, concepts and theories from the literature. This is followed by individual reading in parallel with joint discussion on the web. Each student is then expected to publish a brief text where she relates the literature to her own dissertation project. The reflections are posted as entries to the blog. Each reflection receives commentary from two other students, and the module is closed by the teacher who writes a meta-reflection on all contributions

The vignette is some sort of introduction to the moment. It could be a set of slides, it could be slides with attached voice and maybe also video and it can also be an ordinary streaming video lecture. To make it more vivid another teacher will be present – if possible – making comments, asking questions etc. Thus the lecture will be more like a seminar.

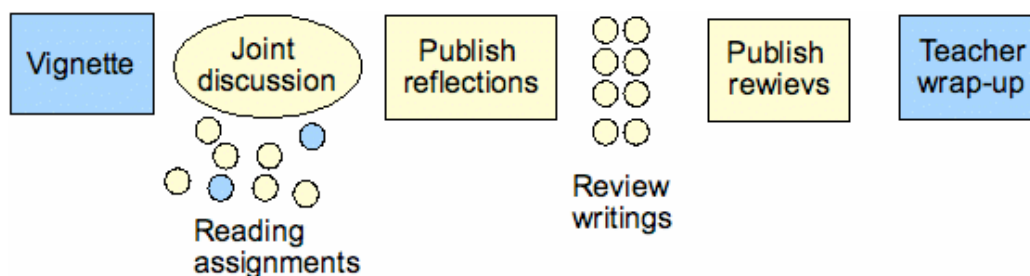


Fig 3 Blog reflection

The time-line is described in fig 3. The blue colour implies activities by the teacher and the yellow colour implies activities by the students. It is to be noted that the teachers main task is to act as a discussion partner. We provide some initial overview, but the main reading, studying and struggling with the text is on your own responsibility. If you get stuck, if you have something you want to ask: Drop a question in the forum and we will answer as soon as possible. In the meantime, some of your fellows might provide an idea of how to do it.

Each part is described in form of learning outcomes, familiar for those who have come in contact with the Bologna system. A learning outcome is something the student should *understand*, *be able to apply* or have a motivated attitude towards, here described as *being able to critically judge*. In your assignments you should convince the examiner that you have understood, are able to apply and can critically judge the specific goal. Sometimes the examiner can be quite hard to convince ;-). The suggested readings are in many case suggestions, you are encouraged to find other complimentary texts. In any case: finding such will increase your possibilities for getting a high grading. :-)

Examination and other serious matters

Examination can be done in various ways: Reports, case solving, blog discussions, design of artefacts, oral examination and combination of all these. For controlling non-cheating we will occasionally require that you take part in a discussion with the teacher about some of your assignments. This discussion **must** take part via the webcam, so we see our faces. Itslearning has also an automatic function for checking of plagiarism (meaning you have copied extensive material from internet without giving reference to its source).

There is a set of small videos presenting some peculiarities in the Swedish education system at: <http://ikt.ei.hv.se/personal/impf/per/Master/Pedintro.html>. You should look at them carefully!

Technical requirements

The program requires some technical infrastructure both on our side and your side. You need the following hardware:

- A computer (not necessary a Windows-computer, Mac and Linux will also work)
- An internet connection capable of at least 512 kb/s
- A webcam

You need the following software:

- Office-package (not necessary MS, OpenOffice and similar is OK)
- A web-browser
- Marratech-client (can be found at <http://www.marratech.se/>)

We use the teaching portal "Its Learning" at BTH. You **must** use its function for supplying assignment, in order to simplify the administration and ensure a fast treatment of the assignment. Access to the next part is so far given manually, so after delivery it will normally take some time before you have it. Normally it should not take more than 4 h.

References

The Joint Task Force for Computing Curricula: *Computing Curricula – The Overview Report covering undergraduate degree programs in Computer Engineering, Computer Science, Information Systems, Information Technology, Software Engineering*, A cooperative project of The Association for Computing Machinery (ACM), The Association for Information Systems (AIS), The Computer Society (IEEE-CS), 30 September 2005

Lars Svensson, Christian Östlund: Bridging Design Theory and Distance Educational Practice with Techno-Pedagogical Genres, *Educational Technology & Society*, 9 (4), 2007 (forthcoming)