Degree Project: Master of Science (one year) in Computational Science and engineering
Exemarsarbete för magisterexamen i beräkningsteknik

15.0 credits

Course Code: 5DV140
Established: 20 December 2012
Established by: teknisk-naturvetenskapliga fakultetsnämnden
Syllabus valid from: 2012, week 45
Responsible Department: Department of Computing Science
SCB Subject: Informatics/Computer and SystemSciences
Main Field of Study and progress level: Computational Science and Engineering: second cycle, contains degree
project for Master of Arts/Master of Science (60 credits) (A1E)
Grading System: VG Pass with distinction , G Pass, U Fail
Level of Education: Advanced level

Requirements
To be admitted you must have a Bachelor's Degree and courses at the advanced level corresponding to 30 ECTS-credits
out of which at least 15hp must be in Computational Science and Engineering (Beräkningsteknik) or equivalent.
Depending on the focus of the Degree Project some extra prerequisites might be needed. Proficiency in English equivalent
to Swedish upper Secondary course English A. Where the language of instruction is Swedish, applicants must prove
proficiency in Swedish to the level required for basic eligibility for higher studies.

Learning Outcomes

Knowledge and understanding
After the course the student will:
- demonstrate an advanced knowledge in at least one data field of science,

Skills and abilities
After the course the student will:
- demonstrate an ability to critically and independently identify and formulate
- demonstrate an ability to plan and use appropriate methods, carry out advanced tasks within specified limits,
- demonstrate the ability to verbally and in writing, to present and discuss their conclusions and the knowledge and
  arguments behind them, in dialogue with such masters in the field and lay people
- communicate about the project in oral and written English
- demonstrate an ability to systematically integrate knowledge acquired in key quality courses during their studies
  and to seek, analyze and critically assess scientific literature that is relevant to the problem

Values and attitudes
After the course the student will:
- demonstrate an ability to critically evaluate own and others' work with regard to scientific, social and ethical
  aspects.

Contents
During the course the student will develope her/his ability to specify, plan, accomplish and present an individual project.
The student should apply her/his knowledge from previous education in the project work and deepen her/his knowledge
in at least one field of computing science (in-depth study). The in-depth study should provide some insight in research
and development in computing science. The results must be presented both orally as well as in a written report.

Part 1. Individual projekt work (13 ECTS-credits)
The individual project work should be carried out within a research project at the University or within a development
project in the IT-industry. The project work must consist of general problem solving techniques and lead to a deeper
understanding of the subject. Moreover, the project must not consist of coding work only. The in-depth study must be
related to current scientific trends.

Part 2. Presentation (2 ECTS-credits)
Apart from the previously mentioned written report, the Master's degree candidates have to present their work orally (in
the form of a Thesis defence). Moreover, the student must act as an opponent in a fellow student's presentation, both for
the written report and during the oral presentation. English will be the primary language.

Instruction
Instruction consists of individual instruction. A supervisor within the department appointed for each student, with whom
regular contact is maintained. The student will conserve the available tutoring resources and the student may not
normally require tutorial support more than 6 months after the start of work. Another supervisor appointed by the client at the external examination work. In addition to tutoring the student independently identify, seek, evaluate and summarize information sources in order to provide a scientific background to the work done. The student will independently plan and carry out work in a timely manner and present it both orally and in writing. The student should also read up on another degree and opposition on this.

Examination

**Examination**

**Part 1, independent work**, assessed in terms of
a) planning, implementation and evaluation of the thesis work, and
b) scientific and engineering content and results.

**Part 2, presentation**, assessed in terms of
c) the written report
d) oral presentation and
e) planning and execution of opposition

Part 1 of the course is graded Fail (U) or Pass (G) and Part 2 of the course is graded Fail (U), Pass (G) or Pass with Distinction (VG). The course in total is graded Fail (U), Pass (G) or Pass with Distinction (VG). To pass the course, it is required that all the criteria, i.e. a) to e) above, and mandatory modules are approved. The total grade on the course is an overall assessment of the results of the different parts and are decided at the end of the course. The students that have not passed the course after one academic year have to retake the course in all parts, i.e. the students have to start all over with a new subject.

A student who has failed two tests for a course or part of a class, are entitled to have another examiner appointed, unless there are special reasons against it (HF6 Chap. § 22). Requests for new examiner made head of the Department of Computer Science.

**Other Directives**

**Transfer of credits**
This course may not be used towards a degree, in whole or in part, simultaneously with another course of similar content. If in doubt, consult the student counselors at the Department of Computing Science and / or program director of your program.

Transfer of credits is considered individually (see the University Code of Rules).

**Course Literature**

**Reading list valid from: 2012, week 48**

The literature is chosen individually together with the examiner / supervisor.