Syllabus

for course at first level

Computer Science I
Datalogi I

15.0 Higher Education Credits
15.0 ECTS credits

Course code:	DA2001
Valid from:	Autumn 2007
Date of approval:	2006-09-27
Department	Department of Mathematics (incl. Math. Statistics)
Subject	Informatics/Computer and Systems Sciences
Specialisation:	G1F - First cycle, has less than 60 credits in first-cycle course/s as entry requirements

Decision

This syllabus has been approved by the Board of the Faculty of Science at Stockholm University, September 27, 2006.

Prerequisites and special admittance requirements

For course admission knowledge equivalent to the following is required: Mathematics I, FL, 30 HECs (MM2001) or Mathematics for the Natural Sciences, FL, 15 HECs (MM1001), to be studied either simultaneously, or before, Computer Science I, FL.

Course structure

Examination code	Name	Higher Education Credits
THEO	Theory	7.5
LABO	Practical Exercises	7.5

Course content

a. The course is an introduction to the tools necessary for continued studies in computer science and treats: Introduction to computer science. The use of computer terminals and personal computers. Text editing. Introduction of computer science concepts: recursion, tail recursion, iteration, list handling etc. Programming methodology in modern, algorithmic programming languages. The type concept. Syntax and semantics. Type systems and type equivalence. Binding mechanisms, side effects and environments. Data and program abstraction. Abstract data types and incapsulation. Modularisation. Overview of programming languages, their principles and areas of use. Introduction to specific algorithms like searching, sorting, file-processing etc.

b. The course includes the following elements:
• Theory, 7.5 HECs. Comprises the theoretical parts of the course, minor programming tasks, and investigative tasks given an account of at special presentation occasions.
• Practical Exercises, 7.5 HECs. Lager programming tasks covering those concepts and techniques that has been taught up to each single practical exercises occasion.

Learning outcomes

It is expected that the student after taking the course will:
• be able to give an account of basic computer science concepts such as data types and type systems, the

algorithm concept, recursion, tail recursion, iteration,
• be able to use at least one programming language,
• be able to give a brief account of characteristics for different types of programming languages and programming paradigm,
• be able to solve simple to semi difficult programming tasks from given problem descriptions,
• be able to solve also more complex programming tasks in collaboration with other students,
• orally, as well as in writing, be able to present and discuss work of his/her own.

Education
The education consists of lectures, exercises, presentations, and practical exercises.

Participation in at least 50 % of the home exercises presentation occasions is compulsory. An examiner may rule that a student is not obliged to participate in certain compulsory education, if there are special grounds for this, after consultation with the relevant teacher.

Forms of examination
a. Examination for the course is in the following manner: measurement of knowledge takes place through written and/or oral examination.

b. Grading is carried out according to a 7-point scale related to learning objectives:
A = Excellent
B = Very Good
C = Good
D = Satisfactory
E = Sufficient
Fx = Fail
F = Fail

c. Grading criteria for the course will be distributed at the start of the course.

d. A minimum grade of E is required to pass the course, together with completion of all practical exercises and approved oral presentations of home assignments at, at least, 50 % of the presentation occasions, followed by the award of a "Sufficient" grade.

e. Students who fail to achieve a pass grade in an ordinary examination have the right to take at least further four examinations, as long as the course is given. The term "examination" here is used to denote also other compulsory elements of the course. Students who have achieved a pass grade on an examination may not retake this examination in order to attempt to achieve a higher grade. Students who have failed to reach a pass grade on two occasions have the right to request that a different teacher be appointed to set the grade of the course. A request for such appointment must be sent to the departmental board.

Interim
Students may request that the examination is carried out in accordance with this syllabus even after it has ceased to apply. This right is limited, however, to a maximum of three occasions during a two-year-period after the end of giving the course. A request for such examination must be sent to the departmental board.

Limitations
The course may not be included in a degree together with the course Computer Science, Basic Course I (NA1030), or the equivalents.

Misc
The course is a component of the Bachelor's Programme in Computer Science, the Bachelor's Programme in Scientific Computing, the Bachelor's Programme in Mathematics, and the Bachelor's Programme in Biomathematics, and it can also be taken as an individual course.

Required reading
Course literature is decided by the departmental board and is described in an appendix to the syllabus.