

Syllabus

for course at first level

Computer Science II
Datalogi II

15.0 Higher Education
Credits
15.0 ECTS credits

Course code:	DA3001
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: Computer Science I, FL, 15 HECs (DA2001), and the Algebra part, 15 HECs, of Mathematics I, FL, 30 HECs (MM2001).

Course structure

Examination code	Name	Higher Education Credits
OOPT	Object Oriented Programming, Theory	4.5
OOPPL	Object Oriented Programming, Practical Exercises	3
DOAT	Computer Graphics and User Interfaces, Theory	3
DOAL	Computer Graphics and User Interfaces, Practical Exercises	4.5

Course content

a. The course covers object oriented concepts and design principles. Object oriented programming methods and techniques. Algorithms for searching, sorting, and storing. The course also treats basic computer graphics with fundamental concepts and practical work using modelling software and a software/API (application programmer interface). A survey of interaction is also included.

b. The course includes the following elements:

- Object Oriented Programming, Theory, 4.5 HECs
- Object Oriented Programming, Practical Exercises, 3 HECs
- Computer Graphics and User Interfaces, Theory, 3 HECs
- Computer Graphics and User Interfaces, Practical Exercises, 4.5 HECs

Learning outcomes

It is expected that the student after taking the course will:

- be able to explain and use object oriented concepts,
- be able to develop larger object oriented programs,
- in a given situation be able to decide which method that is the most useful for searching, storing or sorting,

- be able to briefly explain fundamental terms and concepts within computer graphics such as geometrical transformations, illumination models, removal of hidden surfaces and rendering,
- be able to explain the ideas in some fundamental algorithms for computer graphics and to some extent be able to compare and evaluate these algorithms,
- be able to use basic parts of a modelling software such as Maya in order to build simple 3D objects,
- be able to use a software/API such as OpenGL to build simple 3D objects,
- have the ability to value the importance of including aspects of human-computer interaction in the development of IT products,
- have obtained an insight into that human-computer interaction requires special skills and knowledge.

Education

The education consists of lectures, exercises, seminars, presentations, submitted work, and practical exercises.

Participation in the practical exercises, seminars, and submitted work 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, and oral presentations of exercises.

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 all other compulsory education, followed by its presentation and 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 II (NA2030), Object Oriented Programming I (NA8720), Computer Graphics and User Interfaces (NA8740), Object Oriented Programming, FL (DA3002), or the equivalents.

Misc

The course is a component of the Bachelor's Programme in Computer Science, and the Bachelor's Programme in Scientific Computing, 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.