Linnæus University

Jnr: 2014/3326-3.1.2

Course syllabus

Faculty of Technology
Department of Computer Science

4DV001 Vetenskapliga metoder inom datavetenskap, 7,5 högskolepoäng

Scientific Methods in Computer Science, 7.5 credits

Main field of study
Computer Science

Subject Group
Informatics/Computer and Systems Sciences

Level of classification
Second Level

Progression
A1N

Date of Ratification
Approved 2013-12-16
Revised 2014-10-07 by Faculty of Technology.
The course syllabus is valid from autumn semester 2014

Prerequisites
90 credits in Computer Science (including a degree project at Bachelor level).

Objectives

The course aims at giving the student basic knowledge on theory of science and scientific methodology in the field of Computer Science and Software Engineering.

Upon completion of the course, the student should be able to:

- identify, formulate, discuss, and analyse scientific problems and reason about and select relevant and applicable scientific methods
- find relevant information and literature for a given problem
- find relevant information on research ethics and apply it in your research project
- apply methods for quantitative and qualitative data collection and analysis in the fields computer science and software engineering
- analyse, and assess scientific texts.

Content

The course comprises:

- theory of science and scientific methods in computer science and software engineering
- scientific literature retrieval
- research ethics

- analysis of scientific publications
- how to structure and write scientific texts
- presentation of scientific problem and suitable scientific method in the fields computer science and software engineering.

Type of Instruction
Teaching consists of lectures and seminars.

Examination
The course is assessed with the grades Fail (U), Pass (G) or Pass with Distinction (VG).
Assessment of student performance is made through written test and/or oral examinations and/or presentation of mandatory assignments. The assessment method is decided at the start of the course.

Students who do not pass the regular examination will be offered retrials close to the regular examination.

On request, students may have their credits translated to ECTS-marks. Such a request must be sent to the examiner before the grading process starts.

Course Evaluation
A course evaluation will be carried out and compiled after the course is completed. The compilation will be presented to the current board as well as to the students and filed.

Required Reading and Additional Study Material
Required literature
Alan Chalmers,*What is this thing called science 4ed. (2013)*,Open University Press , ISBN 978- 0335262786 (314 pages)

Material from the department 150 pages.

Additional literature
Ronald N. Giere, John Bickle, Robert Mauldin, *Understanding Scientific Reasoning*, Cengage Learning; 5ed. (2005), ISBN: 978-0155063266, (308 pages)