



Course syllabus

Faculty Board of Science and Engineering
School of Computer Science, Physics and Mathematics

4DV101 Komponentbaserad programutveckling, 7,5 högskolepoäng
Software from Components, 7.5 credits

Main field of study

Computer Science

Subject Group

Informatics/Computer and Systems Sciences

Level of classification

Second Level

Progression

A1F

Date of Ratification

Approved by Organisational Committee 2009-12-01

The course syllabus is valid from autumn semester 2010

Prerequisites

The equivalent of 90 credits in Computer Science.

Expected learning outcomes

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

- understand state-of-the-art component techniques
- apply state-of-the-art component techniques to build software from predefined components
- understand novel approaches to build software from predefined components and relate them to the state-of-the-art component techniques

Content

The course introduces programming with predefined components and shows the benefits and drawbacks of this style of software development.

The course covers the following topics:

- Software design with reuse and software design for reuse
- Problems solved by component-based software: remote and language transparency
- Historic approaches to solve these problems, e.g. modular and object-oriented programming, and their shortcomings
- Component-based approaches and systems: Java Beans, COM, DCOM, CORBA, and Enterprise Java Beans, and their achievements as well as their

shortcomings

- Comparing the classic approaches with newer ideas on the same level of abstraction, like XML/Java technology and .NET
- More advanced approaches like generative and aspect-oriented programming
- Architectural systems
- Meta-programming as the technical basis of many of the above architectures and techniques.

Additionally, novel approaches to building software from predefined components may be selected at the start of the course and added to the course contents .

Type of Instruction

Lectures, seminars and self studies.

Examination

The course is assessed with the grades Fail (U), Pass (G) or Pass with Distinction (VG).

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.

Written examination and/or assignments which are presented orally and/or in written form. The assessment method will be decided at the start of the course.

Students who do not pass the regular examination are given the opportunity to do a resit examination shortly after the regular examination.

Course Evaluation

A written course evaluation will be carried out at the end of the course in accordance with the guidelines of the University. The course evaluation will be filed at the department.

Other

Upon request, a Swedish University degree will be issued upon successful completion of the full demands for that degree.

Upon request, a Swedish University course certificate will be issued upon successful completion of the course.

Required Reading and Additional Study Material

Required reading

Relevant literature / papers will be selected together with supervisor and examiner.