



# ID2006 Software Evolution and Maintenance 7.5 credits

## Vidareutveckling och underhåll

This is a translation of the Swedish, legally binding, course syllabus.

If the course is discontinued, students may request to be examined during the following two academic years

## Establishment

Course syllabus for ID2006 valid from Autumn 2007

## Grading scale

A, B, C, D, E, FX, F

## Education cycle

Second cycle

## Main field of study

## Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

## Intended learning outcomes

After the accomplished course, the student should be able to

- plan for the whole software lifecycle in the initial phases of software development

- identify all support line levels involved in evolution and maintenance
- identify problems within the industry and research
- choose appropriate problem management method. The choice should be based on software criticality and problem urgency.
- explain differences among all the types of maintenance categories
- make decisions and manage legacy systems
- identify retirement activities
- evaluate agile methods from the lifecycle perspective
- motivate why it is important to build in evolvability/maintainability in a system
- describe and motivate evolution laws.

## Course contents

Lifecycle roadmap is presented and different types of evolution and maintenance activities are placed on it. Status within industry and research is mapped out. Evolution laws are discussed and analyses in different contexts (the traditional, component-based, and open-source). Predelivery and transition maintenance models are studied and criteria for their success are identified. Impact analysis is studied. Different ways to manage customer problems are surveyed, both the critical (emergency) and non-critical ones. Retirement process model is considered. Finally, the quality attribute "maintainability" is discussed and compared to "bad smells".

## Specific prerequisites

- basic knowledge in software engineering

## Course literature

Kajko-Mattsson, Software Evolution and Maintenance, Compendium, DSV.

## Examination

- INL1 - Assignment, 3.0 credits, grading scale: P, F
- TEN1 - Examination, 4.5 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

## Other requirements for final grade

- written exam, 4,5 credit points
- assignment, 3 credit points

## Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.