DIT265 Software Evolution Project, 15 credits

Mjukvaruevolutionsprojekt, 15 högskolepoäng

Second Cycle

Confirmation

This course syllabus was confirmed by Department of Computer Science and Engineering on 2023-11-08 to be valid from 2024-09-02, autumn semester of 2024.

Field of education: Science 100%
Department: Department of Computer Science and Engineering

Position in the educational system

The course is a compulsory course in the Software Engineering and Management Master's Programme and an single subject course at the University of Gothenburg.

The course can be part of the following programmes: 1) Computer Science, Master's Programme (N2COS) and 2) Software Engineering and Management Master's Programme (N2SOF)

Main field of studies	*Specialization*
Software Engineering	A1F, Second cycle, has second-cycle course/s as entry requirements

Entry requirements

To be eligable for this course, the student needs to have successfully completed the following requirements, or equivalent:

- A bachelor degree in Software Engineering, Computer Science, Information Technology, Information Systems, or equivalent
- Advanced Requirements Engineering (7.5 credits)
- Quality Assurance and Testing (7.5 credits)

Applicants must prove knowledge of English: English 6/English B or the equivalent level of an internationally recognized test, for example TOEFL, IELTS.

Learning outcomes

On successful completion of the course the student will be able to:

Knowledge and understanding

- explain the notion of software evolution,
- summarize state of the art in methods and tools for software evolution tasks, such as program comprehension and software refactoring,
- discuss the challenges associated with software evolution,
- explain current research trends in program comprehension, and refactoring

Competence and skills

- extract a software product's architecture from a given code base and evaluate the quality of the software product,
- implement one software evolution scenario,
- implement changes to a software product that lead to an improvement of the product's quality,
- make use of synergies between different improvements goals for the same product.

Judgement and approach

- detect and judge needs for quality improvement or evolution in an authentic software product,
- plan the use of appropriate methods and techniques for performing a software evolution scenario and a quality improvement task,
- judge needs for improvement of methods and tools to support software evolution,
- plan and evaluate ideas for new or improved tools.

Course content

The course consists of two modules, including a group project and individual assignments.

Sub-courses

1. **Project** *(Projekt),* 12 credits
   Grading scale: Pass with distinction (5), Pass with credit (4), Pass (3) and Fail (U)
2. **Assignments** *(Inlämningsuppgifter),* 3 credits
   Grading scale: Pass with distinction (5), Pass with credit (4), Pass (3) and Fail (U)

Form of teaching

The course contains project- and problembased teaching.

Language of instruction: English

Assessment

The course consists of two modules:

- A group project carried out in groups of students.
- One or more individual assignments.

Furthermore, individual optional assignments can be used to collect bonus points during the course.

If a student, who has failed the same examined component twice, wishes to change examiner before the next examination, a written application shall be sent to the department responsible for the course and shall be granted unless there are special reasons to the contrary (Chapter 6, Section 22 of Higher Education Ordinance).

In cases where a course has been discontinued or has undergone major changes, the student shall normally be guaranteed at least three examination occasions (including the ordinary examination) during a period of at least one year from the last time the course was given.

Grades

The grading scale comprises: Pass with distinction (5), Pass with credit (4), Pass (3) and Fail (U).
The grading scale comprises Fail (U), 3, 4 or 5.
To pass the course, all mandatory components must be passed. To earn a higher grade than Pass, a higher weighted average from the grades of the components is required.

Course evaluation

The course is evaluated through meetings both during and after the course between teachers and student representatives. Further, an anonymous questionnaire is used to ensure written information. The outcome of the evaluations serves to improve the course by indicating which parts could be added, improved, changed or removed.

Additional information

The course is a joint course together with Chalmers.

Course literature to be announced the latest 8 weeks prior to the start of the course.

The course replaces the course DIT588 Software Evolution Project 15 credits. The course cannot be included in a degree which contains DIT588. Neither can the course be included in a degree which is based on another degree in which the course DIT588 is included.