DIT113   Mini Project: Systems Development, 7.5 credits

Miniprojekt: Systemutveckling, 7,5 högskolepoäng

First Cycle

Confirmation

This course syllabus was confirmed by Department of Computer Science and Engineering on 2021-09-30 to be valid from 2022-01-17, spring semester of 2022.

Field of education: Science 100%

Department: Department of Computer Science and Engineering

Position in the educational system

The course is compulsory within the N1SOF Software Engineering and Management Bachelor programme.

The course can be part of the following programmes: 1) Software Engineering and Management Bachelor's Programme (N1SOF) and 2) Software Engineering and Management, Bachelor's Programme (N1SEM)

Main field of studies	*Specialization*
Software Engineering	G1F, First cycle, has less than 60 credits in first-cycle course/s as entry requirements

Entry requirements

To be eligible for this course, students must have taken the course DIT032 Data Managment, 7,5 hec, or equivalent, and must have successfully completed the course DIT092 Mini Project: Team Programming, 7,5 hec, or equivalent.

Learning outcomes

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

Knowledge and understanding
- define software in a system context
- describe system requirements, system and software design, and relations between the requirements and software design

Competence and skills
- organize software development teams and conduct software development projects, using modern software engineering methodologies such as agile development
- elicit, analyze, and document requirements in the form of a requirements specification
- design software and document outcome of design work
- implement software according to a documented software design

Judgement and approach
- reflect on integration between software and non-software components
- evaluate traceability between requirements, design, and implementation artefacts

Course content

The course introduces a project, in a problem-based learning approach, guided by realistic and challenging customer requirements. The project course is organized as group work.

The student shall deliver a design specification of the system under construction. The design shall be implemented, and result in a working and tested software prototype. In this course the student learn to analyze the demands of a customer, capture these in a software requirements specification and to design and develop software from this analysis and to verify and validate that the software developed satisfies the given requirements.

Further, the student will learn to plan a project, work in a project team and use the software project development methods.

The studies will use systems that consists of non-software parts such as hardware platform, sensor and actuators, and software parts that include software platform and software components. The student will design and implement the software components, test and analyze the system in respect to the defined requirements.

Sub-courses

1. **Project** *(Projekt),* 7.5 credits
   Grading scale: Pass with distinction (5), Pass with credit (4), Pass (3) and Fail (U)

Form of teaching

The teaching consists of introductory lectures, weekly group meetings, seminars, as well as supervision in connection to the meetings.

Language of instruction: English

Assessment

The course is examined through written artifact review and oral examination based on the course learning outcomes. The course is examined by a demonstrable system which is presented orally at a seminar at the end of the course. The course is also examined by a final written report. The work is carried out in groups of 5-7 students.

Furthermore, the student needs to submit a written report where the student shows his or her:

- artifact contributions to the project and subgroup he/she was a member of
- role in the project group,
- fulfillment of responsibilities for this role in terms of artifacts and activities,
- interaction and knowledge transfer activities with others, and
- how this contributed to the project as a whole.

Students are required to complete written self- and peer-assessment forms during the course which will be part of the assessment of the student's individual contribution to the project.

In case a student fully participated in the project work, but failed the project in a few elements, one individual re-examination is provided. In case the student did not contribute to the project work, or failed the re-examination, the student has to join a new project group.

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 a meeting 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

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

The course replaces the course DIT112, 7.5 credits. The course cannot be included in a degree which contains DIT112. Neither can the course be included in a degree which is based on another degree in which the course DIT112 is included.