Software Engineering

Programme course

12 credits

Programutvecklingsmetodik

TDDC88

Valid from: 2017 Spring semester

Determined by
Board of Studies for Industrial
Engineering and Logistics

Date determined
2017-01-25

Main field of study

Information Technology, Computer Science and Engineering, Computer Science

Course level

Second cycle

Advancement level

A1X

Course offered for

- Industrial Engineering and Management - International, M Sc in Engineering
- Industrial Engineering and Management, M Sc in Engineering
- Applied Physics and Electrical Engineering, M Sc in Engineering
- Computer Science, Master's programme
- Mathematics, Master's programme
- Applied Physics and Electrical Engineering - International, M Sc in Engineering

Specific information

Exchange students may apply for the course after arrival to LiTH but before it starts. The international officer for exchange studies must be contacted before applying.

Entry requirements

Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

Prerequisites

Basic programming experience in Java, algorithms, and databases. Basic knowledge in web programming, teamwork, modeling, and testing.

Intended learning outcomes

The purpose of the course is that the students shall acquire good knowledge in large-scale software engineering. After the course the students shall be able to:

- explain and exemplify basic concepts in the area of large-scale software engineering
- specify, model, implement and test a smaller software system
- define, plan and execute a development project in a group of about 30 students, where several smaller groups can be formed.
- elicit, analyze and document experience from the own development project
- use basic functions from a selection of tools used in software industry

Course content

The following subjects are covered in the lectures:

- Requirements.
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- Planning and processes.
- Design and Architecture.
- Testing and Software Configuration Management.
- Software Quality.

Teaching and working methods

The course contains lectures, seminars and practical exercises. The lectures focus on the theoretical parts of software development, with examples from industry and research. The project is organized by grouping the students into teams where the members work together to perform a development project with a fictitious or real customer who states the requirements. The project aims to give students practical experience in the different steps in a development process: feasibility study, requirements specification, system design, detailed design, implementation, integration, testing, and deployment. Interative development methods are used. The course runs the entire semester. The seminars are project status meetings and give the students an opportunity to train presentation technique and to coordinate and discuss project progress. Presence is mandatory. The labs are carried out in groups of two students and give basic training in a selection of tools suitable for the project work.

The course runs over the entire autumn semester, but about 2/3 of the course content is covered in the first period.

If there is a real customer the students will be required to sign agreements with the client about the secrecy and the right of exploitation, that are in line with the wishes of the client.

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Examination

UPG1	Voluntary hand-in assignment	0 credits	U, 3, 4, 5
PRA1	Project work	6 credits	U, 3, 4, 5
LAB1	Laboratory work	2 credits	U, G
TEN1	Written examination	4 credits	U, 3, 4, 5

TEN1 is a written exam on the course book and the lectures. PRA1 is the project, where both the performance of the group and the individual are graded

Grades

Four-grade scale, LiU, U, 3, 4, 5

Other information

Supplementary courses:
Advanced courses in Software Engineering

Department

Institutionen för datavetenskap

Director of Studies or equivalent

Ahmed Rezine

Examiner

Kristian Sandahl

Course website and other links

http://www.ida.liu.se/~TDDC88/

Education components

Preliminary scheduled hours: 81 h
Recommended self-study hours: 239 h

Course literature

Additional literature

Books

Pfleeger, Shari Lawrence, Atlee, Joanne M., Pfleeger, Shari Lawrence, (2010)
Software engineering : theory and practice
ISBN: 0138141819, 9780138141813
Boston [u.a.] : Pearson, 2010. 4. ed., internat. ed.

Common rules

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at http://styrdokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva.