



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

DIT284 Requirements Engineering, 7.5 credits

Kravhantering, 7,5 högskolepoäng

Second Cycle

Confirmation

This course syllabus was confirmed by Department of Computer Science and Engineering on 2019-02-08 to be valid from 2019-09-02, autumn semester of 2019.

Field of education: Science 100%

Department: Department of Computer Science and Engineering

Position in the educational system

The course is compulsory within Software engineering and Management Master's Programme and is offered within several programmes. It is also a single subject course at the University of Gothenburg.

The course can be part of the following programmes: 1) Computer Science, Master's Programme (N2COS), 2) Applied Data Science Master's Programme (N2ADS), 3) Game Design & Technology Master's Programme (N2GDT) and 4) Software Engineering and Management Master's Programme (N2SOF)

Main field of studies

Software Engineering

Computer Science

Interaction Design

Specialization

A1N, Second cycle, has only first-cycle course/s as entry requirements

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Entry requirements

To be eligible for this course the student should have

- a bachelor degree in Software Engineering, Computer Science, Information Technology, Information Systems, or equivalent;
- a successfully completed course in programming (e.g., DIT042 Object-oriented Programming, DIT012 Imperative Programming with Basic Object-orientation, DIT143 Functional Programming, or equivalent);
- a successfully completed project course (or bachelor thesis) in applied software development or software engineering (e.g., DIT212 Object-oriented programming project, or DIT543 Software Engineering Project).

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 why requirements engineering is a key to successful software engineering
- describe the challenges involved in requirements engineering
- explain the importance of identifying stakeholders and their knowledge, context and goals
- explain the difference between functional and quality requirements
- describe how to conduct bespoke (in-project/single-customer) requirements engineering in terms of common processes and techniques
- explain how market-driven differs from bespoke (in-project/single-customer) requirements engineering
- describe how requirements engineering in agile projects differ from traditional requirements engineering

Competence and skills

- skilfully elicit software requirements
- clearly document software requirements according to industry standards and state-of-the-art
- prioritise requirements
- assure the quality of requirements and requirements specifications
- assess current requirements engineering practices in a software project or a software development company

Judgement and approach

- suggest and motivate relevant improvements on requirements engineering processes
- discuss trade-offs in choosing between different requirements engineering methods and processes given a certain project context

Course content

One of the main challenges in software development is to make sure one is developing the right system, i.e. to understand the requirements that need to be fulfilled. The focus of this course is how to find and collect requirements from relevant sources, both at the start and during a software development project. Different methods for this as well as different underlying principles and formats for documenting and maintaining requirements are covered.

In particular the course covers the problems that arise when requirements engineering is conducted in a fast-paced, cost-sensitive industrial reality. The following topics are included in the course:

- Stakeholder Identification and Management
- Requirements Elicitation
- Writing Requirements and Requirements Specifications
- Quality Assurance of Requirements
- Prioritising Requirements
- Connections and Alignment between Requirements Engineering and other Software Engineering activities
- Requirements Engineering in In-Project vs. Market-driven Development
- Requirements Engineering in Agile and Iterative/Incremental Development"

Sub-courses

1. **Take-home examination** (*Hemtentamen*), 4 credits
Grading scale: Pass with Distinction (VG), Pass (G) and Fail (U)
2. **Project (assignments and workshops)** (*Projekt*), 3.5 credits
Grading scale: Pass with Distinction (VG), Pass (G) and Fail (U)

Form of teaching

The course is organised as a series of lectures, workshops as well as project assignments.

Language of instruction: English

Assessment

The student is examined by individual active participation in all workshops, the completion of a group project and a written individual take-home exam.

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 (VG), Pass (G) and Fail (U).

A Pass grade (G) for the entire course requires at least a Pass grade for all sub-courses.

A Pass with Distinction grade (VG) for the entire course requires in addition a Pass with Distinction (VG) on one of the two sub-courses.

Course evaluation

The course is evaluated through 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

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 DIT276, 7.5 credits. The course cannot be included in a degree which contains DIT276. Neither can the course be included in a degree which is based on another degree in which the course DIT276 is included.