



COMPUTER SCIENCE AND ENGINEERING

DIT276 Requirements Engineering, 7.5 higher education credits

Requirements Engineering, 7,5 högskolepoäng

Second Cycle

Confirmation

This course syllabus was confirmed by The IT Faculty Board on 2009-09-29 and was last revised on 2017-06-16 by Department of Computer Science and Engineering to be valid from 2017-08-20, autumn semester of 2007.

Field of education: Science 100%

Department: Computer Science and Engineering

Position in the educational system

The course is offered within the framework of several degree programmes. The course 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) Software Engineering and Management, Master's Programme (N2SEM), 3) Applied Data Science Master's Programme (N2ADS), 4) Game Design & Technology Master's Programme (N2GDT), 5) Software Engineering Master's Programme (N2SOM), 6) Software Engineering and Management Master's Programme (N2SOF) and 7) No translation available (NDATM)

Main field of studies

Computer Science-Software Engineering and Tech

Software Engineering

Specialization

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

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Entry requirements

To be eligible for the course Requirements Engineering, the student should have a bachelor degree in Software Engineering, Computer Science or equivalent, including a completed course in programming (e.g. DIT948 Programming, DIT011 Object-oriented

Software Development, DIT142 Functional Programming or equivalent), and a completed course in practical software development or software engineering project (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

After completion of the course the student must 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.

Skills and abilities

- 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. **Written exam** (*Written exam*), 4 higher education credits
Grading scale: Pass with Distinction (VG), Pass (G) and Fail (U)
2. **Project** (*Project*), 3.5 higher education 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 exam done individually in an examination hall.

A student who has failed two examinations on the same material has the right to request a change of examiner. Such a request must be submitted to the Department in writing and shall be granted unless there are particular reasons not to do so.

In cases where a course has been discontinued or has undergone major changes, students must be guaranteed at least three examination opportunities (including the regular

opportunity) based on the previous content of the course for a period of at least one year.

Grades

The grading scale comprises: Pass with Distinction (VG), Pass (G) and Fail (U).

In order to be awarded the grade Pass for the whole course, the student must pass the written exam and the project, and participate in all workshops.

In order to be awarded the grade Pass with Distinction for the whole course, the student must pass the written exam with distinction, pass the project, and participate in all workshops.

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.