1 Course title and credit points
The course is titled Software Development for Telecommunication Systems/Programvaruutveckling för telekommunikationssystem and awards 7,5 ECTS credits. One credit point (högskolepoäng) corresponds to one credit point in the European Credit Transfer System (ECTS).

2 Decision and approval
This course is established by Head of Department of Communication Systems 2014-02-14. The course syllabus was revised by Head of Department of Communication Systems and applies from 2014-02-14.

3 Objectives
The objective of the course is to enable the student to understand the processes and methods that can be used by software designers and vendors. The student shall acquire knowledge on how to structure the development work so that the right product is delivered to customers, how to ensure the product is developed in the right way and on time. The student shall also create the prerequisites to perform this work in large groups. The course should also stimulate the students’ problem-solving skills and encourage quality thinking.

4 Content
The course is conducted as a project with the following content:
- System specification (system requirements and operation environment)
- Software design
- Software implementation
- Verification and validation
- Project management
- Configuration management
- Quality assurance

5 Aims and learning outcomes
Knowledge and understanding
On completion of the course the student will be able to:
- describe different type of processes that are used for software engineering
- describe the type of documentation needed to support the software engineering processes
- describe common types of software architecture and design

Competence and skills
On completion of the course the student will be able to:
- plan a software development project with help from the student literature as well as choose a suitable process model
- specify a system and document the system requirements
- document the software architecture
- design and implement the software as well as document the product
- verify and validate the system

Judgment and approach
On completion of the course the student will be able to:
- assume a decision-making role in a software development project
- understand advantages and disadvantages when choosing between design approaches and architecture models
- plan time and resources for a software development project.

6 Generic skills

7 Learning and teaching
The course is taught on campus och contains lectures where general software engineering methods are discussed. The greatest part of the course is conducted as a software development project where students are responsible to
well-specified engineering processes. Project coaching is provided to all project groups. The course is given completely or partially in English. The teaching language is partly, or fully, English.

8 Assessment and grading

Examination of the course

<table>
<thead>
<tr>
<th>Code</th>
<th>Module</th>
<th>Credit</th>
<th>Grade</th>
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<tbody>
<tr>
<td>1405</td>
<td>Written examination[1]</td>
<td>1.5 ECTS</td>
<td>A-F</td>
</tr>
<tr>
<td>1415</td>
<td>Project</td>
<td>6 ECTS</td>
<td>G-U</td>
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</tbody>
</table>

1 Determines the final grade for the course, which will only be issued when all components have been approved.

The course will be graded A Excellent, B Very good, C Good, D Satisfactory, E Sufficient, FX Insufficient, supplementation required, F Fail. In order to obtain a final grade for the course both the project and the examination of the theory part have to be completed and passed.

9 Course evaluation

The course coordinator is responsible for systematically gathering feedback from the students in course evaluations and making sure that the results of these feedback into the development of the course.

10 Prerequisites

Admission to this course requires a course in Programming 15 credit points [högskolepoäng].

11 Field of education and subject area

The course is part of the field of education and is included in the subject area Electrical Engineering.

12 Restrictions regarding degree

The course cannot form part of a degree with another course, the content of which completely or partly corresponds with the contents of this course.

13 Additional information

Knowledge of object-oriented programming, for example Java or C++, is recommended. Replaces ET1208.

14 Course literature and other teaching material