Programme syllabus

Master's Programme, Computer Networks, 60 credits
Magisterprogram, datornätverk
60.0 credits

Valid for students admitted to the education from autumn 07 (HT - Autumn term; VT - Spring term).

This is a translation of the Swedish, legally binding, programme syllabus.

Programme objectives

The program Computer Networks is based on the quality descriptions for Degree of Master, one year (Higher education ordinance, issued by the Swedish national agency for higher education). After completing the courses’ requirements the students must be able to demonstrate the following knowledge, skills and judgments.

Knowledge and understanding

- Broad scientifically based knowledge in the area of data communications and networking
- In-depth and thorough knowledge in the area of IP communication and services in wired and wireless networks.
- Ability to apply advanced knowledge in the area.

Skills and abilities

- Ability to independently identify, formulate, analyze and solve problems in the area of data communications and networking.
- Ability to model and simulate problems in the area
- Ability to apply advanced techniques and tools in the area
- Ability to present and communicate results in an international environment

Ability to make judgements and adopt a standpoint

- Ability to independently and critically analyse results in the area
- Show a professional and ethical responsibility in scientific, technical, ecological and social activities.
- Have understanding that engineering-related problems, considered from a system perspective are often complex, can be incompletely defined and sometimes contain conflicting conditions.
Extent and content of the programme

The program consists of a one-year full time studies corresponding to 60 higher education credits. The program is mainly on the second level. The language of instruction is English. Individual adjustment of the duration of the program is possible, e.g. part-time studies. The program’s main content is Internet based communication and services in wired and wireless networks. It is a mainly a one-track program.

Eligibility and selection

In order to be eligible to apply to the master’s program, a higher education degree of at least 180 higher education credits, technical bachelor’s degree in Electrical engineering, or Computer science must be completed. Specific admission requirements The specific requirements may be assessed as not fulfilled if

1. the degree awarding institution is not considered to meet acceptable quality standards by the authorities of the country in which the institution is located
2. the degree does not qualify for admission to equivalent Master level in the country where the degree is awarded

Selection Admission to the program is based on the following criteria (in order of priority): Assessment of university/higher education institute; grades from previous education; grades in courses relevant to the program; work experience relevant to the program; and letter of recommendation and references. KTH’s admission policy can be found in the KTH Handbook.

Implementation of the education

Structure of the education

The study year is partitioned into four study periods, two during the autumn term and two during the spring term. The program starts in late August and ends in the beginning of June the following year. The program is given at Campus Haninge, KTH. Courses The program consists of the following courses and subjects. Term 1: Communication networks (covers the lower part of the communication model) Queuing theory The Internet protocols (covers the upper part of the communication model) Internet services and traffic measurements Alternative course that can replace one of the courses in term 1): Routing in IP networks Term 2: Wireless networks Programming of mobile services Degree project The language of instruction is English. Course descriptions and syllabuses can be found in KTH study handbook. Course names and numbers are listed in Appendix 1.

Courses

The programme is course-based. Lists of courses are included in appendix 1.

Grading system

Courses in the first and the second cycle are graded on a scale from A to F. A-E are passing grades, A is the highest grade. The grades pass (P) and fail (F) are used for courses under certain circumstances.

Conditions for participation in the programme
A condition in order to be able to participate in the studies is that the student must enrol for the next term every spring and fall. This is done via “My pages” on KTH’s web page between November 1st and 15th and between May 1st and 15th. With the enrolment, the student has submitted their intention of studying and participating in the program. Only after that is it possible for the student to: - register for courses - register for the term - get results

**Recognition of previous academic studies**

The student has the possibility to apply to receive credit from courses taken at another university/higher education institution both in Sweden and from abroad. The application can be found on KTH’s web page. KTH’s policy for recognition of previous academic studies can be found entirely in the KTH Handbook.

**Degree project**

The degree project gives the student an opportunity to show his/hers ability of independent work in the main area of the program, as well as writing reports and scientific papers. The degree project work can be started only after a large portion of the studies have been completed. Adviser for the degree project is appointed by the program director. Guidelines for the degree project can be found in the KTH Handbook 2 (page 15.5) and the instructions for degree projects at the School of Technology and Health.

**Degree**

In order to graduate with the Degree of Master of Science (One Year) within the main area Computer networks, a passing grade must be achieved in all courses in the student’s study plan. The study plan must comprise 60 higher education credits including a degree project consisting of 15 higher education credits. KTH’s local degree ordinance can be found in the KTH Handbook.

**Appendix 1 - Course list**
**Appendix 2 - Programme syllabus descriptions**
Appendix 1: Course list

Master's Programme, Computer Networks, 60 credits (TDNKM), Programme syllabus for studies starting in autumn 2007

General courses

Year 1

Mandatory courses (67.5 Credits)

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>6H3399</td>
<td>Degree Project</td>
<td>15.0 hp</td>
<td></td>
</tr>
<tr>
<td>HF2000</td>
<td>Queuing Theory</td>
<td>7.5 hp</td>
<td>Second cycle</td>
</tr>
<tr>
<td>HI1017</td>
<td>Programming of Mobile Services with J2ME</td>
<td>7.5 hp</td>
<td>First cycle</td>
</tr>
<tr>
<td>HI1M00</td>
<td>Communication Networks</td>
<td>7.5 hp</td>
<td>First cycle</td>
</tr>
<tr>
<td>HI1M01</td>
<td>The Internet Protocols</td>
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<td>First cycle</td>
</tr>
<tr>
<td>HI2001</td>
<td>Wireless Networks</td>
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<td>Second cycle</td>
</tr>
<tr>
<td>HI2002</td>
<td>Routing in IP Networks</td>
<td>7.5 hp</td>
<td>Second cycle</td>
</tr>
<tr>
<td>HI2008</td>
<td>Internet Services and Traffic Measurements</td>
<td>7.5 hp</td>
<td>Second cycle</td>
</tr>
</tbody>
</table>
Appendix 2: Specialisations

Master's Programme, Computer Networks, 60 credits (TDNKM), Programme syllabus for studies starting in autumn 2007

This programme has no specialisations.