



Programme syllabus

[An accessible version of the syllabus can be found in the Course and programme directory.](#)

Bachelor's Programme in Information and Communication Technology 180 credits

Kandidatprogram, informations- och kommunikationsteknik

Valid for students admitted to the education from autumn 12 (HT - Autumn term; VT - Spring term).

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

Programme objectives

Information and communication technology is one of the strongest forces driving the changes of our society. The Internet, computers and communication technology has a global impact on society. Technology advancements is the basis for new products and business opportunities in mobile services, tele and data communication, medical technology, automotive industry, product development processes and computer gaming. ICT also opens for sustainable development. The program gives the student a solid basis for future employment and work within these areas but also for continued studies on Master level. After completion of the program students are qualified to seek admission to later parts of the Information technology and the Computer Science integrated B.Sc. and M.Sc. programs at KTH.

Knowledge and understanding

The students should:

- show that they have acquired knowledge and understanding of the area of Information and Communication Technology including knowledge on the scientific basis of the area, knowledge of appropriate methods within the area, and
- acquire progressive knowledge within the area of their selected major and basic understanding of relevant research.

Skills and abilities

The students should:

- show ability to retrieve, gather, evaluate and interpret relevant information related to a problem and to discuss events, questions and events,
- independently identify, isolate and solve problems and tasks within given time limits,
- show the ability to present and discuss information, problems and solutions orally and in writing to different groups, and
- show such skills necessary to independently work within the area of ICT

Ability to make judgements and adopt a standpoint

To be awarded the degree of Bachelor of Technology of Information and Communication Technology the student should:

- show the ability that within the area of ICT make decisions based on relevant scientific, societal and ethical aspects
- show insight to the role of knowledge and technology in society and the responsibility of the human for its usage, and
- show the awareness of being able to recognize his/hers need to further enhance knowledge and competences

Further information on the requirements to be awarded a B.Sc. degree from KTH is found in http://intra.kth.se/regelverk/utbildning-forskning/utbildning-och-forskning-1.30435?l=en_UK

Extent and content of the programme

The program requires courses corresponding to 180 ECTS credits, corresponding to three years of full time studies. The program is on basic level with some courses on advanced level in the third year. The courses are, with few exceptions, taught in Swedish. Literature in English is common.

Eligibility and selection

Eligibility to enter the program is given by basic eligibility (grundläggande behörighet) as defined by Swedish law and KTH local decision on special eligibility (särskild behörighet). The special eligibility are education corresponding to: Math D, Physics A and Chemistry A. For each of the subjects a grade of at least Pass or 3 is required. For further information refer to: http://intra.kth.se/regelverk/utbildning-forskning/grundutbildning/antagning?l=en_UK

Implementation of the education

Structure of the education

The academic year at KTH is divided into four reading periods of app. 7 weeks duration. Each period is followed by an examination period of app. one week. In addition to the four reading periods there are three re-examination periods in: the beginning of January, at the end of May and immediately before the start of the first reading period in the fall semester. Written examination of individual courses are normally offered twice in the academic year.

For further information refer to:

<http://www.kth.se/student/schema/>

http://intra.kth.se/regelverk/utbildning-forskning/utbildning-och-forskning-1.30435?l=en_UK

The curricula for the B.Sc. program in ICT contains mandatory courses in academic years 1 and 2. In the third year the students should define a set of courses of at least 20 ECTS credits as an area of specialization. These courses are selected from a set of conditionally elective courses. A degree project of 15 ECTS credits is required.

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

Course selections and signing up must be actively made by all students intending to study next (following) semester.

This signing up procedure is a basis for registration and tuition basis for decisions on promotion to the following semester. Course Registration is done via a web-based tools “ Studera.nu”. Signing up for fall semester are made by 15 May and for spring semester by 15 November.

Promotion in the program are:

- From year 1 to year 2, 45 credits is needed
- From year 2 to year 3, 90 credits is needed.

Course registration, in course, is done before the third week of the course starting date in order for the notified students to declared that they intend to follow the course.

Recognition of previous academic studies

Recognition of previous academic studies will be done according to KTH regulations, see http://intra.kth.se/regelverk/utbildning-forskning/grundutbildning/prestationer?l=en_UK

Degree project

More detailed description of the requirements for the degree project course can be found in the course syllabus of the chosen degree course.

See KTH regulations for general requirements

http://intra.kth.se/regelverk/utbildning-forskning/grundutbildning/examensarbete?l=en_UK

Degree

After completing the study programme the student needs to apply for a Degree Certificate. This degree is entitled “Teknologie kandidatexamen” - Bachelor of Science. The text on the degree certificate states the educational programme completed by the student.

See KTH local degree regulations

http://intra.kth.se/regelverk/utbildning-forskning/grundutbildning/examina?l=en_UK

Appendix 1 - Course list

Appendix 2 - Programme syllabus descriptions



Appendix 1: Course list

Bachelor's Programme in Information and Communication Technology (TKOMK)

General courses

Year 1

Mandatory courses (60.0 Credits)

Code	Name	Credits	Edu. level
ID1004	Object-oriented Programming	7.5 hp	First cycle
ID1005	Algorithms and Data Structures	7.5 hp	First cycle
IE1204	Digital Design	7.5 hp	First cycle
II1300	Engineering Skills	7.5 hp	First cycle
IS1200	Computer Hardware Engineering	7.5 hp	First cycle
IX1300	Introduction in Mathematics	7.5 hp	First cycle
IX1303	Algebra and Geometry	7.5 hp	First cycle
IX1304	Calculus	7.5 hp	First cycle

Optional courses

Code	Name	Credits	Edu. level
II1310	Introduction to Computer Studies	1.5 hp	First cycle
SF1611	Introductory Course in Mathematics I	1.5 hp	First cycle

Year 2

Mandatory courses (52.5 Credits)

Code	Name	Credits	Edu. level
ID1019	Programming II	7.5 hp	First cycle
ID1354	Internet Applications	7.5 hp	First cycle
IK1203	Networks and Communication	7.5 hp	First cycle
IS1350	Operating Systems	7.5 hp	First cycle
IV1302	IT-project, part 1 method	7.5 hp	First cycle
IX1500	Discrete Mathematics	7.5 hp	First cycle
IX1501	Mathematical Statistics	7.5 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
ID1003	Project IT	7.5 hp	First cycle
IS1204	IT Project Course, part 2	7.5 hp	First cycle

Year 3

Mandatory courses (7.5 Credits)

Code	Name	Credits	Edu. level
ID2212	Network Programming with Java	7.5 hp	Second cycle

Optional courses

Code	Name	Credits	Edu. level
IK2206	Internet Security and Privacy	7.5 hp	Second cycle
LS1309	English B1	7.5 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
DD1352	Algorithms, Data Structures and Complexity	9.0 hp	First cycle
DD1361	Programming Paradigms	7.5 hp	First cycle
DD2388	Program System Construction using .NET Framework	7.5 hp	Second cycle
DD2418	Language Engineering	6.0 hp	Second cycle
DD2431	Machine Learning	6.0 hp	Second cycle
DH2620	Human-Computer Interaction, Introductory Course	6.0 hp	Second cycle
IC1007	Human-computer Interaction: Principles and Design	7.5 hp	First cycle
ID1217	Concurrent Programming	7.5 hp	First cycle
ID2202	Compilers and Execution Environments	7.5 hp	Second cycle
ID2207	Modern Methods in Software Engineering	7.5 hp	Second cycle
ID2213	Logic Programming	7.5 hp	Second cycle
ID2216	Developing Mobile Applications	7.5 hp	Second cycle
IK2001	Security for Java Environment and Electronic Commerce	7.5 hp	Second cycle
IV1201	Design of Global Applications	7.5 hp	First cycle



Appendix 2: Specialisations

Bachelor's Programme in Information and Communication Technology (TKOMK)

This programme has no specialisations.