



Programme syllabus

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

Degree Programme in Computer Science and Engineering 300 credits

Civilingenjörsutbildning i datateknik

Valid for students admitted to the education from autumn 10 (HT - Autumn term; VT - Spring term).

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

Programme objectives

Computer Science and Engineering is the most influential factor on society and will remain so during the foreseeable future. An essential usage of Computer Science and Engineering is the efficiency of resource usage and communication in society for a sustainable development.

The Master of Science in Computer Science and Engineering programme at KTH aims to give the student the prerequisites and abilities to participate in and lead work with appraisal, development and influence of new Computer Science and Engineering technologies.

Knowledge and understanding

The programme has the goal that a Master of Computer Science and Engineering should:

- have fundamental knowledge within Computer Science and Engineering
- have profound knowledge in mathematics, i.e. have the ability to explain and carry out mathematical reasoning and define and analyze mathematical models.
- have knowledge in human and natural sciences, especially such knowledge which has consequences for design of computerized systems.
- have knowledge about industrial entrepreneurship and relevant legislation.

Skills and abilities

The programme has the goal that a Master of Computer Science and Engineering should:

- have prerequisites and abilities to participate in and develop the practices which are applied in industry, administration, and academic research.
- have the ability to independently define and solve computer-related construction problems.
- have the prerequisites for successful work in international and multidisciplinary project groups which consist of people from both technical and non-technical backgrounds. This includes the ability to orally, and in writing, present as well as argue in Swedish and English.

Ability to make judgements and adopt a standpoint

The programme has the goal that a Master of Computer Science and Engineering should:

- Independently analyze and adopt a standpoint on economical, societal, environment-related and ethical consequences of computer science applications, and to design systems concerning this.
- Through self-development, retain one's professional abilities during a professional career.
- Follow and promote the discussion concerning technology in society.

Extent and content of the programme

The Master of Computer Science and Engineering is composed of 300 ECTS credits, which, at normal study rate, corresponds to 5 years of full-time study (10 semesters).

The first three years (180 ECTS credits) are on the first level.

Master's programs

The last two years the student takes a master's program of his/her choice. The master's programs consist of courses mainly in the second level. The education leads to a master's degree as well as a "civilingenjör" degree.

Each year a list of master's programs that the students can choose from is presented.

International profiles

There are two international profiles for asiatic languages: one for Chinese and one for Japanese. There is also an international profile for European languages where one of the languages French, Spanish, and German is studied.

The international profiles have special application codes at studera.nu.

Language of instruction

The language of instruction, during the first three years of the programme is mostly Swedish; although English literature will be used. The concluding two years some courses are given in Swedish and some in English. For each course the language of instruction is found in the Course and program directory on the KTH student web site.

Eligibility and selection

In order to be accepted to the Master of Computer Science and Engineering programme the basic eligibility requirements as well as the following requirements must be met: Mathematics E, Physics B, Chemistry A (according to the swedish school system). All with at least a grade of Godkänd (Passed).

For eligibility requirements and selection, see the KTH admission policy
<http://intra.kth.se/regelverk/utbildning-forskning/grundutbildning/antagning/1.27186>

Implementation of the education

Structure of the education

The syllabus for the Master of Computer Science and Engineering program consists of

- compulsory first level courses during study years 1–3 concluded by a first level degree project.
- courses within the master's program that the student has chosen for study years 4–5, concluded by a second level degree project.
- elective first and second level courses giving the education the profile desired by the student.

Specialization in language engineering

The specialisation in Language Engineering begins in the fall semester in study year 2 with courses in linguistics taken at Stockholm University. These courses replace some of the compulsory courses. (See appendix 2)

International profile

The programme plan for the Master of Computer Science in Engineering with the international profile starts with compulsory courses in study years 1-3 and courses within the specialisation language. Study year three is concluded by a first level degree project. In study years 4–5 the student follows a master's program of his/her choice. Within this program additional language courses are taken. Study year 5 is concluded by a second level degree project.

The student is offered to spend two semesters at one of the KTH partner universities using the language of the specialization. These semesters are allocated to the portion of the programme which is given on the second level.

Since the students on the international profile take language courses during study years 4-5 the choice of master programs is more limited. The student has three possibilities:

1. Take the master program in Computer science that offers a sufficient number of credits for elective courses.
2. In consultation with the program co-ordinator and the international co-ordinator investigate the possibilities of choosing another master program.
3. In consultation with the program co-ordinator and the international co-ordinator skip some of the mandatory courses from the selected master program and only receive the degree of Master of Science in Engineering degree (civilingenjör) and not the degree of Master of Science.

The international specialisation is special because the language courses start in the first year and are taken continuously throughout the programme. In total, 60 ECTS credits in Japanese or Chinese or 40 ECTS credits in French, Spanish, or German are taken. Compared to the normal Computer Science programme, three courses are omitted for students on the international specialisation.

Bachelor's degree

The programme is designed in such a manner that the student after three years of studies can obtain a bachelor's degree. The student can then continue his/her studies on the Computer science and engineering program, continue his/her studies in another program at KTH or another University in Sweden or abroad or start his/her work career.

Academic year

The KTH academic year is 40 weeks, divided into four periods. Each study period is followed by an examination period. There are also three re-examination periods.

For details about the structure of the academic year see http://www.kth.se/student/schema/1.1007?l=en_UK

Courses

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

The course goals, prerequisites, contents and examination requirements are found in the course syllabus in the Course and program directory on the KTH student web. The programme consists of compulsory, conditionally elective and elective courses. The compulsory courses are defined in course lists for each study year.

Elective courses can be chosen from KTH's course selection for Master of Science in Engineering programmes. Courses from other universities can be recognized for credit, if the degree requirements are fulfilled.

For elective courses, the following restrictions apply:

- Elective courses can not be taken in study year 1
- Only under certain circumstances can elective courses be taken in study year 2.
- The number of higher education credits which can be taken per semester can be limited.

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

Semester enrollment

No later than November 15 and May 15 the student is required to make a study enrollment for the next semester at the CSC Program Office.

This study enrollment is required in order for the exam results to be registered.

Approved leave from studies

Approved leave from studies means that the student does not participate in the education during at least one study period. The student has the right to return to the education at a time agreed upon, and has the right to participate in the examination of non-finished courses.

Application for an approved leave is done according to instructions from the CSC program office. When the student decides to return to the education, he/she is required to re-enroll to the studies..

Selection of courses

From study year 3 and on the student is responsible for applying to all courses he/she wishes to take. This also applies to compulsory courses. The application for admission to a course is done according to instructions from the CSC school no later than

May 15th for the fall semester
November 15th for the spring semester

Applications made after this date are only granted if there are vacancies in the courses. Applications to language courses with prerequisites should be preceded by a qualification test.

In a few courses, the number of participants is limited. Selection is done by the school responsible for the course.

Admission to compulsory courses during study years 1–2 is, in most cases, automatic. Students wishing to study an individual specialization or choosing among alternative compulsory courses have to submit a special form.

Choice of master's program

The student must apply for the master's program he/she wishes to follow during study years 4–5 according to instructions given by the CSC program office.

Course registration

Course registration is done by the school/department giving the course. It can only be done if the course has been selected.

The student must, at the first scheduled lecture, register for the course. Course registration for compulsory as well as elective courses must be done individually. If the student registers for a course and then decides to not continue, the student must notify the school/department giving the course as soon as possible.

Conditions for being promoted to the next level

The following promotion requirements apply in order to participate in the next level of the education.

Requirements for promotion from study year 1 to study year 2:

A total of at least 45 ECTS credits from study year 1 must be completed.

Requirements for promotion from study year 2 to study year 3:

A total of at least 90 ECTS credits from study years 1 and 2 must be completed whereof at least 50 higher education credits from study year 1.

Requirements for promotion from study year 3 to study year 4:

A total of at least 150 ECTS credits from study years 1-3 must be completed whereof 110 ECTS credits from study year 1-2, and the first level degree project.

Requirements for promotion from study year 4 to study year 5:

In addition to what applies for promotion to study 4, at least 45 higher education credits from study year 4 must be completed.

Individual study plan

Students who do not fulfill these requirements must – in cooperation with the CSC program office – make an individual study plan for continued studies.

Please see the KTH regulations: http://intra.kth.se/regelverk/utbildning-forskning/grundutbildning/1.27217?l=en_UK

Recognition of previous academic studies

Credits for studies at another university can be received. An application form can be found on the KTH Student pages.

The application form is submitted to the CSC program office.

For in-depth information about the KTH policy for crediting previous studies, see http://intra.kth.se/regelverk/utbildning-forskning/grundutbildning/prestationer/1.27200?l=en_UK

Studies abroad

Students at the Master of Science in Engineering in Computer Science and Engineering programme have the opportunity to study one or two semesters abroad through agreements KTH has with universities within and outside the EU. Exchange studies are appropriate during the fourth or fifth study years. It is also possible to make the final degree project (second cycle) abroad.

For more information contact the international coordinator at CSC.

Degree project

Degree project, first cycle

A degree project of 15 ECTS credits (first cycle) is done during study year 3.

KTH comprehensive rules and guidelines for degree projects of 15 ECTS credits for Degree of Bachelor of Science 180 ECTS credits, and grading of the project are found in the KTH regulations.

http://intra.kth.se/regelverk/utbildning-forskning/grundutbildning/examensarbete/1.27211?l=en_UK

Degree project, second cycle

A second degree project of 30 ECTS credits (second cycle) is done during study year 5.

KTH comprehensive rules and guidelines for degree projects of 30 ECTS credits for Degree of Master of Science in Engineering, Degree Programme in Computer Science and Technology 300 ECTS credits, and grading of the project is found in the KTH regulations.

<http://intra.kth.se/regelverk/utbildning-forskning/grundutbildning/examensarbete/1.27205>

Second cycle degree project for the Degree of Master of Science in Engineering can be performed in the following subjects:

Computer science, Biomedical engineering, Human-computer interaction, Media technology, Numerical analysis, Musical acoustics, Electroacoustics, Speech communication, Computer and systems sciences, Teleinformatics and Industrial control systems.

Other subjects for the degree project may be considered upon application. For more information, contact the CSC program office.

It is the responsibility of the student to find a suitable project task.

Degree

Application for graduation

Students may apply for the following degrees: Degree of Bachelor of Science and Degree of Master of Science in Engineering, Degree Programme in Computer Science. Students can also request for Degree of Master of Science (Two Years) if the requirements for this degree are met.

Instructions for the application are available on the KTH student web.

Conditions for the Degree of Bachelor of Science 180 ECTS credits

The Degree of Bachelor of Science is received if the student applies for graduation after the completion of the 3rd study year and fulfills the national degree requirements and has completed all courses within the program corresponding to 180 ECTS credits, including

- courses of at least 25 ECTS credits within mathematics-natural sciences,
- courses of at least 90 ECTS credits (including 15 ECTS credits from the degree project) with successive progression in the main field of education.

Degree name

Teknologie kandidatexamen
Degree of Bachelor of Science

Conditions for the Degree of Master of Science in Engineering 300 ECTS credits

The Master of Science in Engineering degree is received after completing the programme. The programme is designed so that the student fulfills the national degree requirements and has completed courses corresponding to 300 ECTS credits, including

- courses of at least 45 ECTS credits within mathematics-natural sciences, and, in addition, courses of at least 180 higher ECTS credits (including 30 ECTS credits from the degree project) in the subjects central to the technical area
- courses of at least 90 ECTS credits in the second cycle, whereof at least 60 ECTS credits (including 30 ECTS credits from degree project) in the subjects central to the technical area

Degree name

Civilingenjörsexamen

Degree of Master of Science in Engineering, Degree Programme in Computer Science and Technology

Conditions for Degree of Master of Science (Two Years) 120 ECTS credits.

See KTH regulations (see link below).

Degree name

Teknologie masterexamen

Degree of Master of Science (Two Years)

Information on degree requirements in the KTH regulations:

http://intra.kth.se/regelverk/utbildning-forskning/grundutbildning/examina/1.27227?l=en_UK

Appendix 1 - Course list

Appendix 2 - Programme syllabus descriptions



Appendix 1: Course list

Degree Programme in Computer Science and Engineering (CDATE)

General courses

Year 1

Mandatory courses (64.0 Credits)

Code	Name	Credits	Edu. level
DD1341	Introduction to Computer Science	16.0 hp	First cycle
DD1390	Programme Integrating Course in Computer Science Engineering <i>2 cr belong to study year 1; distribution over the periods: 0,1; 1,5; 0,2; 0,2</i>	6.0 hp	First cycle
DH1600	Communication in Engineering Sciences	7.5 hp	First cycle
SF1604	Linear Algebra	7.5 hp	First cycle
SF1625	Calculus in One Variable	7.5 hp	First cycle
SF1626	Calculus in Several Variables	7.5 hp	First cycle
SF1659	Mathematics, Basic Course	4.5 hp	First cycle
SK1131	Physics: Waves and Particles	7.5 hp	First cycle

Optional courses

Code	Name	Credits	Edu. level
SF1611	Introductory Course in Mathematics I	1.5 hp	First cycle

Year 2

Mandatory courses (63.0 Credits)

Code	Name	Credits	Edu. level
DD1350	Logic for Computer Science	6.0 hp	First cycle
DD1361	Programming Paradigms	7.5 hp	First cycle
DD1368	Database Technology	6.0 hp	First cycle
DD1390	Programme Integrating Course in Computer Science Engineering <i>3 cr belong to study year 2; distribution over the periods: 0,1; 0,3; 0,6; 2,0</i>	6.0 hp	First cycle
DH1620	Human-Computer Interaction, Introductory Course	6.0 hp	First cycle
DN1241	Numerical Methods, Basic Course III	7.5 hp	First cycle
IS1500	Computer Organization and Components	9.0 hp	First cycle
ME1010	Organization and Knowledge-Intensive Work	6.0 hp	First cycle
SF1901	Probability Theory and Statistics	6.0 hp	First cycle
SF1904	Markov Processes, Basic Course	3.0 hp	First cycle

Supplementary information

Language technology specialization

Students may choose a language technology specialization and then take three courses at Stockholm university during the fall: LIN111 Introduction to linguistics, LIN112 The Architecture of Language 1 and LIN113 The Architecture of Language 2. These students do not take DD1350, DD1361 and DN1241 during the second study year.

The rest of the students

Year 3

Mandatory courses (51.0 Credits)

Code	Name	Credits	Edu. level
DD1352	Algorithms, Data Structures and Complexity	9.0 hp	First cycle
DD1365	Software Engineering <i>Note the eligibility. Must be taken the same academic year as DD143X</i>	6.0 hp	First cycle
DD1390	Programme Integrating Course in Computer Science Engineering <i>1 cr belongs to study year 3; distribution over the periods: 0,1; 0,1; 0,2; 0,6</i>	6.0 hp	First cycle
DD143X	Degree Project in Computer Science, First Cycle <i>Must be taken the same academic year as DD1365</i>	15.0 hp	First cycle
DD2395	Computer Security	6.0 hp	Second cycle
SF1630	Discrete Mathematics	9.0 hp	First cycle

Optional courses

Code	Name	Credits	Edu. level
AE1706	The Global Engineer - To Work Internationally	7.5 hp	First cycle
AG1814	Sustainable Development for Computer Science and Engineering	6.0 hp	First cycle
AK1202	History of Science and Technology	7.5 hp	First cycle
AK2003	Technology and Ethics	7.5 hp	Second cycle
DA2190	General Cultural Knowledge	6.0 hp	Second cycle
DD1395	In-depth Essay in Computer Science	3.0 hp	First cycle
DD1396	Parallel and Concurrent Programming in Introduction to Computer Science	3.0 hp	First cycle
DD2372	Automata and Languages	6.0 hp	Second cycle
DD2387	Program System Construction Using C++	6.0 hp	Second cycle
DD2388	Program System Construction using .NET Framework	7.5 hp	Second cycle
DD2390	Internet Programming	6.0 hp	Second cycle
DD2423	Image Analysis and Computer Vision	7.5 hp	Second cycle

DD2432	Artificial Neural Networks and Other Learning Systems	6.0 hp	Second cycle
DD2439	Artificial Intelligence and Multi-agent Systems, Project Course	21.0 hp	Second cycle
DD2441	Seminars on Theoretical Computer Science	6.0 hp	Second cycle
DD2448	Foundations of Cryptography	7.5 hp	Second cycle
DD2457	Program Semantics and Analysis	6.0 hp	Second cycle
DD2460	Software Safety and Security	7.5 hp	Second cycle
DD2476	Search Engines and Information Retrieval Systems	9.0 hp	Second cycle
DH2323	Computer Graphics and Interaction	6.0 hp	Second cycle
DH2641	Interaction Programming	6.0 hp	Second cycle
DS1364	Rhetoric - the Art of Persuasion	7.5 hp	First cycle
EQ1100	Signals and Systems, part II	7.5 hp	First cycle
ID1217	Concurrent Programming	7.5 hp	First cycle
ID2200	Operating Systems	6.0 hp	Second cycle
IK1550	Internetworking	6.0 hp	First cycle
ME1003	Industrial Management, Basic Course	6.0 hp	First cycle
ME2015	Project Management: Leadership and Control	6.0 hp	Second cycle
ME2062	Technology-based Entrepreneurship	7.5 hp	Second cycle
ME2063	Team Leadership and Human Resource Management	6.0 hp	Second cycle
MJ2613	Sustainable Development	6.0 hp	Second cycle
SF1634	Differential Equations II	9.0 hp	First cycle
SF1635	Signals and Systems, part I	7.5 hp	First cycle
SF1649	Vector Analysis and Complex Functions	7.5 hp	First cycle
SG1102	Mechanics, Smaller Course	6.0 hp	First cycle

Supplementary information

Batch 10 take their third study year during 2012/2013.

Below is a list of elective courses. Other courses may be chosen.

Be aware that for some of the master's programs that you can choose for years 4–5 you must choose specific courses to fulfill the eligibility requirements.

Year 4

Supplementary information

During study years 4 and 5 the students follow a master program of their choice. For each year a list of master programs that may be chosen is established. The list for 2011/12 contained 15 master programs.

Year 5

Supplementary information

During study years 4 and 5 the students follow a master program of their choice. For each year a list of master programs that may be chosen is established. The list for 2011/12 contained 15 master programs.

International Profile (INT)

Year 1

Mandatory courses (56.5 Credits)

Code	Name	Credits	Edu. level
DD1341	Introduction to Computer Science	16.0 hp	First cycle
DD1390	Programme Integrating Course in Computer Science Engineering <i>Only 2 cr belong to study year 1</i>	6.0 hp	First cycle
SF1604	Linear Algebra	7.5 hp	First cycle
SF1625	Calculus in One Variable	7.5 hp	First cycle
SF1626	Calculus in Several Variables	7.5 hp	First cycle
SF1659	Mathematics, Basic Course	4.5 hp	First cycle
SK1131	Physics: Waves and Particles	7.5 hp	First cycle

Optional courses

Code	Name	Credits	Edu. level
SF1611	Introductory Course in Mathematics I	1.5 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
DS1323	German, Advanced Beginners Level	7.5 hp	First cycle
DS1339	French, Advanced Beginners Level	7.5 hp	First cycle
DS1343	Spanish, Advanced Beginners Level	7.5 hp	First cycle

Supplementary information

One of the language courses is taken.

Year 2

Mandatory courses (49.5 Credits)

Code	Name	Credits	Edu. level
DD1361	Programming Paradigms	7.5 hp	First cycle
DD1368	Database Technology	6.0 hp	First cycle
DD1390	Programme Integrating Course in Computer Science Engineering <i>3 cr belong to study year 2</i>	6.0 hp	First cycle
DH1620	Human-Computer Interaction, Introductory Course	6.0 hp	First cycle
IS1500	Computer Organization and Components	9.0 hp	First cycle
ME1010	Organization and Knowledge-Intensive Work	6.0 hp	First cycle
SF1901	Probability Theory and Statistics	6.0 hp	First cycle
SF1904	Markov Processes, Basic Course	3.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
DD1350	Logic for Computer Science	6.0 hp	First cycle
DN1241	Numerical Methods, Basic Course III	7.5 hp	First cycle
DS1324	Technical German, Intermediate Level	9.0 hp	First cycle
DS1334	Technical French, Intermediate Level	9.0 hp	First cycle
DS1348	Technical Spanish, Intermediate Level	9.0 hp	First cycle

Supplementary information

Batch 10 take the second study year during 2011/12.

A course in the language chosen must be taken.

At least one of the courses DN1241 Numerical methods and DD1350 Logic must be taken. If both are taken then DD2395 Computer security can be skipped in study year 3.

Year 3

Mandatory courses (45.0 Credits)

Code	Name	Credits	Edu. level
DD1352	Algorithms, Data Structures and Complexity	9.0 hp	First cycle
DD1365	Software Engineering	6.0 hp	First cycle
DD1390	Programme Integrating Course in Computer Science Engineering	6.0 hp	First cycle
DD143X	Degree Project in Computer Science, First Cycle	15.0 hp	First cycle
SF1630	Discrete Mathematics	9.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
DD2395	Computer Security <i>May be skipped if both DN1241 and DD1350 was taken during year 2</i>	6.0 hp	Second cycle
DS2326	Technical German, Advanced Level	9.0 hp	Second cycle
DS2336	Technical French, Advanced Level	9.0 hp	Second cycle
DS2349	Technical Spanish, Advanced Level	9.0 hp	Second cycle

Supplementary information

Batch 10 take the third study year during the academic year 2012/13.

Year 4

Supplementary information

During study years 4 and 5 the students follow a master program of their choice. For each year a list of master programs that may be chosen is established. Since the students on the international profile take language courses during study years 4-5 the choice of master programs is more limited.

Year 5

Supplementary information

During study years 4 and 5 the students follow a master program of their choice. For each year a list of master programs that may be chosen is established. Since the students on the international profile take language courses during study years 4-5 the choice of master programs is more limited.

International Profile, Japanese (JAP)

Year 1

Mandatory courses (62.5 Credits)

Code	Name	Credits	Edu. level
DD1341	Introduction to Computer Science	16.0 hp	First cycle
DD1390	Programme Integrating Course in Computer Science Engineering <i>Only 2 cr belong to study year 1</i>	6.0 hp	First cycle
DS1381	Elementary Japanese and Japanese Studies	6.0 hp	First cycle
SF1604	Linear Algebra	7.5 hp	First cycle
SF1625	Calculus in One Variable	7.5 hp	First cycle
SF1626	Calculus in Several Variables	7.5 hp	First cycle
SF1659	Mathematics, Basic Course	4.5 hp	First cycle
SK1131	Physics: Waves and Particles	7.5 hp	First cycle

Optional courses

Code	Name	Credits	Edu. level
SF1611	Introductory Course in Mathematics I	1.5 hp	First cycle

Year 2

Mandatory courses (55.5 Credits)

Code	Name	Credits	Edu. level
DD1361	Programming Paradigms	7.5 hp	First cycle
DD1368	Database Technology	6.0 hp	First cycle
DD1390	Programme Integrating Course in Computer Science Engineering <i>3 cr belong to study year 2</i>	6.0 hp	First cycle
DH1620	Human-Computer Interaction, Introductory Course	6.0 hp	First cycle
DS1383	Japanese, Advanced Beginners Level I	6.0 hp	First cycle
IS1500	Computer Organization and Components	9.0 hp	First cycle
ME1010	Organization and Knowledge-Intensive Work	6.0 hp	First cycle
SF1901	Probability Theory and Statistics	6.0 hp	First cycle
SF1904	Markov Processes, Basic Course	3.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
DD1350	Logic for Computer Science	6.0 hp	First cycle
DN1241	Numerical Methods, Basic Course III	7.5 hp	First cycle

Supplementary information

Batch 10 take the second study year during 2011/12.

At least one of the courses DN1241 Numerical methods and DD1350 Logic must be taken. If both are taken then DD2395 Computer security can be skipped in study year 3.

Year 3

Mandatory courses (54.0 Credits)

Code	Name	Credits	Edu. level
DD1352	Algorithms, Data Structures and Complexity	9.0 hp	First cycle
DD1365	Software Engineering	6.0 hp	First cycle
DD1390	Programme Integrating Course in Computer Science Engineering	6.0 hp	First cycle
DD143X	Degree Project in Computer Science, First Cycle	15.0 hp	First cycle
DS1385	Japanese, Advanced Beginners Level II	9.0 hp	First cycle
SF1630	Discrete Mathematics	9.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
DD2395	Computer Security <i>May be skipped if both DN1241 and DD1350 were taken during study year 2</i>	6.0 hp	Second cycle

Supplementary information

Batch 10 take the third study year during the academic year 2012/13.

Please note that study year 4 also includes a course in Japanese.

Year 4

Mandatory courses (9.0 Credits)

Code	Name	Credits	Edu. level
DS1386	Japanese, Intermediate Level	9.0 hp	First cycle

Supplementary information

During study years 4 and 5 the students follow a master program of their choice. For each year a list of master programs that may be chosen is established.

Since the students on the international profile take language courses during study years 4-5 the choice of master programs is more limited. The student has three possibilities:

1. Take the master program in Computer science that offers a sufficient number of credits for elective courses. The compulsory course ID2200 Operating system is not compulsory for the students following the japanese language track.
2. In consultation with the program co-ordinator and the international co-ordinator investigate the possibilities of choosing another master program.
3. In consultation with the program co-ordinator and the international co-ordinator skip some of the compulsory courses from the selected master program and only receive the degree of Master of Science in Engineering degree (civilingenjör) and not the degree of Master of Science.

Year 5

Supplementary information

During study years 4 and 5 the students follow a master program of their choice. For each year a list of master programs that may be chosen is established. Since the students on the international profile take language courses during study years 4-5 the choice of master programs is more limited.

International Profile, Chinese (KIN)

Year 1

Mandatory courses (62.5 Credits)

Code	Name	Credits	Edu. level
DD1341	Introduction to Computer Science	16.0 hp	First cycle
DD1390	Programme Integrating Course in Computer Science Engineering <i>Only 2 cr belong to study year 1</i>	6.0 hp	First cycle
DS1391	Elementary Chinese and Chinese Studies	6.0 hp	First cycle
SF1604	Linear Algebra	7.5 hp	First cycle
SF1625	Calculus in One Variable	7.5 hp	First cycle
SF1626	Calculus in Several Variables	7.5 hp	First cycle
SF1659	Mathematics, Basic Course	4.5 hp	First cycle
SK1131	Physics: Waves and Particles	7.5 hp	First cycle

Optional courses

Code	Name	Credits	Edu. level
SF1611	Introductory Course in Mathematics I	1.5 hp	First cycle

Year 2

Mandatory courses (55.5 Credits)

Code	Name	Credits	Edu. level
DD1361	Programming Paradigms	7.5 hp	First cycle
DD1368	Database Technology	6.0 hp	First cycle
DD1390	Programme Integrating Course in Computer Science Engineering <i>3 cr belong to study year 2</i>	6.0 hp	First cycle
DH1620	Human-Computer Interaction, Introductory Course	6.0 hp	First cycle
DS1393	Chinese, Advanced Beginners Level I	6.0 hp	First cycle
IS1500	Computer Organization and Components	9.0 hp	First cycle
ME1010	Organization and Knowledge-Intensive Work	6.0 hp	First cycle
SF1901	Probability Theory and Statistics	6.0 hp	First cycle
SF1904	Markov Processes, Basic Course	3.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
DD1350	Logic for Computer Science	6.0 hp	First cycle
DN1241	Numerical Methods, Basic Course III	7.5 hp	First cycle

Supplementary information

Batch 10 take the second study year during the academic year 2011/12.

At least one of the courses DN1241 Numerical methods and DD1350 Logic must be taken. If both are taken then DD2395 Computer security can be skipped in study year 3.

Year 3

Mandatory courses (54.0 Credits)

Code	Name	Credits	Edu. level
DD1352	Algorithms, Data Structures and Complexity	9.0 hp	First cycle
DD1365	Software Engineering	6.0 hp	First cycle
DD1390	Programme Integrating Course in Computer Science Engineering	6.0 hp	First cycle
DD143X	Degree Project in Computer Science, First Cycle	15.0 hp	First cycle
DS1395	Chinese, Advanced Beginners Level II	9.0 hp	First cycle
SF1630	Discrete Mathematics	9.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
DD2395	Computer Security <i>May be skipped if both DN1241 and DD1350 were taken during study year 2</i>	6.0 hp	Second cycle

Supplementary information

Batch 10 take the third study year during the academic year 2012/13.

Please note that study year 4 also includes a course in Chinese.

Year 4

Mandatory courses (9.0 Credits)

Code	Name	Credits	Edu. level
DS1396	Chinese, Intermediate Level	9.0 hp	First cycle

Supplementary information

During study years 4 and 5 the students follow a master program of their choice. For each year a list of master programs that may be chosen is established.

Since the students on the international profile take language courses during study years 4-5 the choice of master programs is more limited. The student has three possibilities:

1. Take the master program in Computer science that offers a sufficient number of credits for elective courses. The course ID2200 Operating system is not compulsory for the students following the Chinese language track.
2. In consultation with the program co-ordinator and the international co-ordinator investigate the possibilities of choosing another master program.
3. In consultation with the program co-ordinator and the international co-ordinator skip some of the compulsory courses from the selected master program and only receive the degree of Master of Science in Engineering degree (civilingenjör) and not the degree of Master of Science.

Year 5

Supplementary information

During study years 4 and 5 the students follow a master program of their choice. For each year a list of master programs that may be chosen is established. Since the students on the international profile take language courses during study years 4-5 the choice of master programs is more limited.

Language Technology (STEK)

Year 3

Mandatory courses (50.5 Credits)

Code	Name	Credits	Edu. level
DD1352	Algorithms, Data Structures and Complexity	9.0 hp	First cycle
DD1361	Programming Paradigms	7.5 hp	First cycle
DD1365	Software Engineering	6.0 hp	First cycle
DD1391	Programme Integrating Course in Computer Science Engineering	4.0 hp	First cycle
DD143X	Degree Project in Computer Science, First Cycle	15.0 hp	First cycle
SF1630	Discrete Mathematics	9.0 hp	First cycle



Appendix 2: Specialisations

Degree Programme in Computer Science and Engineering (CDATE)

International Profile (INT)

The international profile is described under "Implementation of the education".

Students take courses in one of the languages German, French and Spanish and are offered to spend two semesters at one of the KTH partner universities using the language of the specialization.

International Profile, Japanese (JAP)

The international profile, Japanese, is described under "Implementation of the education".

Students take courses in Japanese and are offered to spend two semesters at one of the KTH partner universities using the Japanese language.

International Profile, Chinese (KIN)

The international profile, Chinese, is described under "Implementation of the education".

Students take courses in Chinese and are offered to spend two semesters at one of the KTH partner universities using the Chinese language.

Language Technology (STEK)

No information entered.