



# Courses for Computer Science

The two-year master's programme in Computer Science consists of three terms of courses and one final term dedicated to the master's degree project. Each term consist of approximately 30 ECTS credits. Depending on which track you choose, you will study different courses. The courses presented on this page apply to studies starting in autumn 2022.

## Year 1

Students who in a previous degree have read a course corresponding to DD2380, DD2395, IK2218 or DD2440 may apply to read a replacement course instead. The application is submitted to the master coordinator who, after reviewing the previously read course, helps the student to choose an appropriate replacement course. The course should be at least 6 credits, advanced level and broad in computer science. It must not be included in the student's track and the subject matter may not be close to any of the other compulsory courses.

The choice of replacement course must be approved by the programme director.

Students at KTH:

- from **CINTE** who have read any of the following courses can apply to read a replacement course: IK1203 Network and Communication, ID1214 Artificial Intelligence and Applications, IV1013 Introduction to Computer Security. Contact the master coordinator according to the instructions above.

- from **CDATE**, who started 2011 or earlier, have to take the mandatory course ID2200 Operating System, 6 credits, in the master's programme.

## Mandatory courses for all tracks

- [Introduction to the Philosophy of Science and Research Methodology for Computer Scientists \(DA2210\) 6.0 credits](#)
- [Program Integrating Course in Computer Science \(DD2300\) 2.0 credits](#)
- [Artificial Intelligence \(DD2380\) 6.0 credits](#)
- [Computer Security \(DD2395\) 6.0 credits](#)
- [Advanced Algorithms \(DD2440\) 6.0 credits](#)
- [Protocols and Principles of the Internet \(IK2218\) 6.0 credits](#)

Mandatory courses

- [Software Engineering Fundamentals \(DD2480\) 7.5 credits](#)

Conditionally elective courses

- [Parallel and Distributed Computing \(DD2443\) 7.5 credits](#)
- [Software Reliability \(DD2459\) 7.5 credits](#)
- [Software Safety and Security \(DD2460\) 7.5 credits](#)
- [Principles of Programming Languages \(DD2481\) 7.5 credits](#)
- [Automated Software Testing and DevOps \(DD2482\) 7.5 credits](#)
- [Language-Based Security \(DD2525\) 7.5 credits](#)
- [Program Semantics and Analysis \(DD2557\) 7.5 credits](#)
- [Compilers and Execution Environments \(ID2202\) 7.5 credits](#)

Recommended courses

- [Machine Learning \(DD2421\) 7.5 credits](#)
- [Search Engines and Information Retrieval Systems \(DD2477\) 7.5 credits](#)
- [Concurrent Programming \(ID1217\) 7.5 credits](#)

Year 2

Mandatory courses for all tracks

- [Degree Project in Computer Science and Engineering, Second Cycle \(DA231X\) 30.0 credits](#)
- [Program Integrating Course in Computer Science \(DD2300\) 2.0 credits](#)

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*Changes in the programme may occur.*