

---

# C++ Programming

---

## Course Plan

**EDAF50, study period VT1–2 2020.**  
**7.5 hp.**

---

### Administrative Information

---

*Welcome!* In this course you will learn about C++ and study both the language and the standard library. An important part of the course is to use the differences between C++ and Java to illustrate some important programming concepts, and show aspects of program design that are built into the Java language, but where the C++ programmer has to make a choice. An informal goal of the course is to give participants the tools to become real C++ programmers, not Java programmers who know C++ syntax.

*Prerequisites* Taken *and passed* EDAA01 Programming–Second Course (or corresponding).

*Course coordinator* Sven Gestegård Robertz, office: E:4138 phone: 046–222 96 60,  
email: sven.robertz@cs.lth.se

*Student expedition* Ulrika Templing, office: E:2179. Office hours: 9.30–11.30  
phone: 046–222 80 40, email: expedition@cs.lth.se

*Web page* <http://cs.lth.se/edaf50/>  
Please check the course web page regularly.

*Course literature* As long as you learn C++ you may use any book. Some alternatives (both of the books cover the C++11 standard):

Stanley B. Lippman, Josée Lajoie, Barbara E. Moo: *C++ Primer, fifth edition*, Addison Wesley, ISBN 978-0-321-71411-4. A very good book, everything is correct, a good reference, easier to read than Stroustrup.

Bjarne Stroustrup: *The C++ Programming language, fourth edition*, Addison Wesley, ISBN 0-321-56384-0. Stroustrup is the inventor of C++. Not easy reading, but everything's there.

In addition to the textbook, there are additional resources from the department available on the course web page: the lecture slides, instructions for the computer labs and the project.

---

---

## Course Content, Details

---

|                        |                            |    |
|------------------------|----------------------------|----|
| <i>Course Contents</i> | lectures                   | 12 |
|                        | computer labs (compulsory) | 4  |
|                        | project (compulsory)       | 1  |

*Lectures* Wednesdays 10–12, MA:3 and Thursdays 13–15, E:C

Preliminary headlines for the lectures:

- L1:** Introduction, functions, variables, and data types
- L2:** Introduction cont'd, Pointers and arrays. User defined types
- L3:** Modularity: source code organization, error handling
- L4:** Classes
- L5:** Resource management
- L6:** Functions. Generic programming. Standard algorithms
- L7:** Templates and function objects
- L8:** Classes and polymorphism
- L9:** Standard library containers. More on classes
- L10:** More about the standard library
- L11:** Low-level details. Loose ends
- L12:** Recap. About the project
- L13–L14:** No lecture planned

*Computer labs* The computer labs are compulsory. There is one lab per week during study weeks 3–6. Instructions and assignments are in the handout “Laboratory Exercises, C++ Programming”.

The labs are mostly homework and need extensive preparation. Alternative times for the lab sessions: Mondays 13–15, Tuesdays 15–17, Wednesdays 8–10 or 15–17, or Thursdays 10–12 or 15–17.

The labs are done in groups of two students. Signing up for the labs:

- Visit <https://sam.cs.lth.se/Labs>
- Enroll at the same time as your lab partner. If you enroll on your own, the system will assign you a lab partner.
- Use your StiL id as user id.
- Contact the course coordinator if you have any problems, questions, or need to change your lab time.

*Exercises* There are no scheduled exercise sessions. Instead, there are exercises with problems that you can solve at the computer. You should solve one of the exercises each week (from the second week). The exercise texts, programs to use and suggested solutions are on the course web page.

*Project* The project is compulsory and is to be carried out in groups of two to four students. The project description is in the handout “Project Description, C++ Programming”.

The project report is due Monday, April 27. You may of course hand in the project earlier. See the project description for instructions on how to hand in the project.

---

---

## Examination

---

*Parts* The course is reported as two parts:  
Written Examination 4 hp.  
Laboratory Work and Assignment 3.5 hp

Both parts must be completed to pass the course.

The final grade is based on the result of the written examination.

Please note that you may bring "one C++ book" to the written examination.

*Written examination* Thursday 19/3, 14:00–19:00

*Alternative date* Friday 21/8, 8:00–13:00

---