



Ralf Sasse, Felix Friedrich

# Computer Science

Course at D-MATH/D-PHYS at ETH Zurich

Autumn 2021

# Welcome

## **to the Course Informatik**

at the MATH/PHYS departement of ETH Zürich.

## **Place and time:**

Tuesday 14:15 - 16:00, HG F 7 und HG F 5 (Video).

Pause 15:00 - 15:15, slight shift possible.

## **Course web page**

`http://lec.inf.ethz.ch/ifmp`

# Team

**chef assistant**  
**assistants**

Vytautas Astrauskas

Elas Achler

Andrey Bryutkin

Wiona Sophie Glänzer

Pia Herkenrath

Han-Miru Kim

Damian Manetsch

Julia Meng

Henry Raymond

Seyed Sefidgar

Jérémie Stroschein

Vania Vicenzi

Dr. Ralf Sasse

Manuel Braunschweiler

Tiziano De Matteis

Keanu Gleixner

Manuel Kansy

Hrvoje Krizic

Manuel Mekkattu

Christopher Otto

Börge Scheel

Jean-Pierre Smith

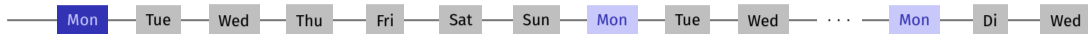
Sverrir Thorgeirsson

Eliza Wszola

Dr. Felix Friedrich

**lecturers**

# Procedure



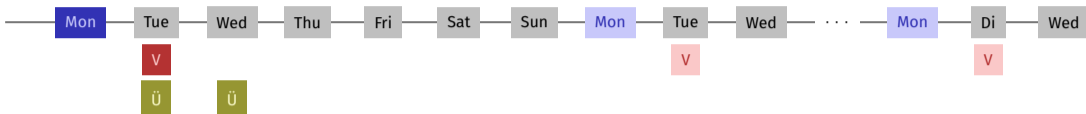
- Exercises available on Monday morning (online)
- Lecture on Tuesday
- Preliminary discussion in the following exercise session (on Tuesday/Wendnesday)
- StudyCenter ([studycenter.ethz.ch](http://studycenter.ethz.ch))
- Solution must be submitted at latest on Monday in the following week (18:00h)
- Discussion of the exercise in the session one week after the submission. Feedback will be provided in the week after the submission.

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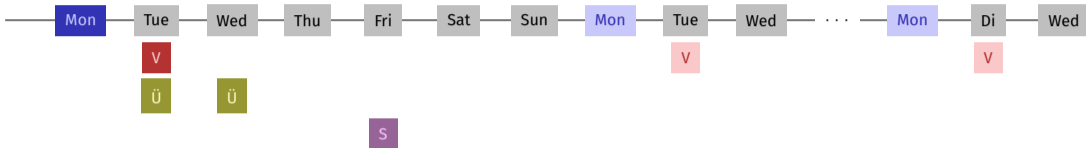
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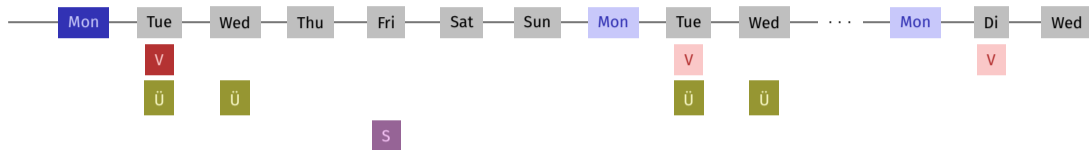
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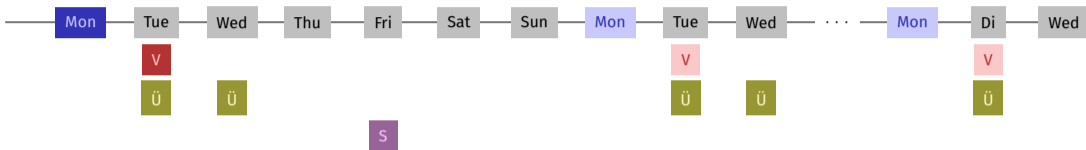
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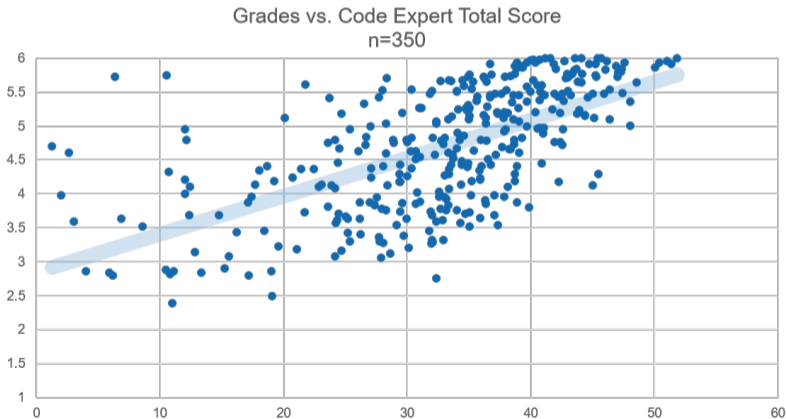
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# Exercises

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# Online Tutorial

The image shows two browser windows side-by-side. The left window is the Codeboard IDE, displaying a C++ program in a file named 'main.cpp'. The code is as follows:

```
1 #include <iostream>
2
3 int main()
4 {
5     std::cout << "Hello World!" << std::endl;
6
7     return 0;
8 }
9
```

The output window below the code shows 'Hello World!'. The right window is the E.Tutorial website, showing a progress bar at 24% and a section titled 'Das erste C++ Programm' (Step 5 of 20). The text on the page reads: 'Lassen Sie uns uns das Programm aus dem vorhergehenden Kapitel genauer untersuchen:' followed by a list of code elements with arrows pointing to their locations in the code: 'int main()' (Hauptfunktion - Hier startet das Programm), 'std::cout << "Hello World!" << std::endl;' (Ausgabe), and 'return 0;' (Beendet das Programm). A 'Code öffnen' button is visible at the bottom of the tutorial page.

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Lassen Sie uns uns das Programm aus dem vorhergehenden Kapitel genauer untersuchen:

- `#include <iostream>` Eingabe und Ausgabe verfügbar machen
- `int main()` Hauptfunktion - Hier startet das Programm
- `std::cout << "Hello World!" << std::endl;` Funktionskörper
- `return 0;` Beendet das Programm

Below this, there is a note: 'Falls Sie Ihr erstes C++ Programm noch nicht geöffnet haben, so öffnen Sie es jetzt durch das Klicken auf die folgende Codeboard Fläche:' followed by a 'Code öffnen' button. At the bottom of the right window, it says: 'Wie Sie gesehen haben, lässt dieses Programm "Hello World!"'.

For a smooth course entry we provide an online C++ tutorial  
Goal: leveling of the different programming skills.

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The output of the program is shown in the terminal area below the code editor: "Hello World!".

The right window is the E.Tutorial website, showing a progress indicator at 24% and a section titled "Das erste C++ Programm" (Step 5 of 20). The text on the page explains the code: "Lassen Sie uns das Programm aus dem vorhergehenden Kapitel genauer untersuchen:" followed by annotations for the code lines: "int main()" is the main function, "std::cout << 'Hello World!' << std::endl;" is the output statement, and "return 0;" is the program termination. A button labeled "Code öffnen" is visible at the bottom of the page.

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Goal: leveling of the different programming skills.

Written mini test for your self assessment in the second exercise session.

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The output of the program is shown in the terminal area at the bottom: "Hello World!".

The right window is the E.Tutorial website, showing a progress bar at 24% and a section titled "Das erste C++ Programm" (Step 5 von 20). The text on the page explains the code:

- `#include <iostream>`: Eingabe und Ausgabe verfügbar machen
- `int main()`: Hauptfunktion - Hier startet das Programm
- `std::cout << "Hello World!" << std::endl;`: Funktionskörper
- `return 0;`: Beendet das Programm

At the bottom of the page, there is a button labeled "Code öffnen" (Open Code) and a note: "Wie Sie gesehen haben, lässt dieses Programm 'Hello World!'".

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Goal: leveling of the different programming skills.

Written mini test for your self assessment in the second exercise session.  
⇒ work through the tutorial until next week

The exam will cover

- Lectures content (lectures, handouts)
- Exercise content (exercise sessions, exercises).



# Exams

Written exam at the computer.

We will test your practical skills (programming skills) and theoretical knowledge (background knowledge, systematics).

# Offer (VVZ)

- During the semester we offer weekly programming exercises that are graded. Points achieved will be taken as a bonus to the exam.
- The bonus is proportional to the score achieved in specially marked bonus tasks, where a full score equals a bonus of 0.25. The admission to specially marked bonus depends on the successful completion of other exercises. The achieved mark bonus expires as soon as the lecture is given anew.

# Offer (Concretely)

- 3 bonus exercises in total; 2/3 of the points suffice for the exam bonus of 0.25 marks
- You can, e.g. fully solve 2 bonus exercises, or solve 3 bonus exercises to 66% each, or ...
- Bonus exercises must be unlocked ( $\rightarrow$  experience points) by successfully completing the weekly exercises
- It is again not necessary to solve all weekly exercises completely in order to unlock a bonus exercise
- Details: course website, exercise sessions, online exercise system (Code Expert)

# Academic integrity

We encourage you explicitly to discuss solution ideas and approaches with your colleagues. Teamwork is important, also in computer science. It is, however, also important that you learn actively and do not only reproduce. Therefore:

## Rules

You submit only solutions that you have written yourself and that you have understood. Copy-paste is not erlaubt, neither are team implementations.