



Welcome!

Scientific Programming with Python

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Story

- ▶ In summer 2013 we organised a summer school about advanced scientific programming in Python ([Link](#)) together with g-node.
- ▶ Due to the large interest, we decided to organise a “UZH-internal” school. Now we have the ninth edition.
- ▶ The content of this course was based on the 2013 school and has since been improved, adapted and expanded continuously.
- ▶ This year’s edition is again on-site after two online editions.
(Recordings available from [Website](#))



Schedule

One topic per half-day (lectures, question time and tutorials)

| Part | Morning | Afternoon |
|------------------|---------------|---------------|
| Lecture | 08:30 - 10:00 | 13:15 - 14:45 |
| Break | 10:00 - 10:30 | 14:45 - 15:15 |
| Question session | 10:30 - 11:00 | 15:15 - 15:45 |
| Tutorial | 11:00 - 12:15 | 15:45 - 17:00 |

Topics

| Day | Morning | Afternoon |
|-----------|-----------------------------------|---------------------------------------|
| Monday | Best practice and git | Object-oriented programming |
| Tuesday | Testing, Debugging, and Profiling | Pandas intro and self-study time |
| Wednesday | Data Structures | Scientific Analytics |
| Thursday | Python and C/C++ | Hardware-assisted speed-up techniques |
| Friday | Visualisation and More | Projects & Questions |



Homepage

www.physik.uzh.ch/~python

Programme

- ▶ Schedule
- ▶ Slides, link to Klicker (used for questions)
- ▶ Exercise/tutorial material

Computing

- ▶ Computing information
- ▶ VirtualBox-Image



Question Sessions

- ▶ We use Klicker to collect questions: <https://app.klicker.uzh.ch/join/pyschool>
- ▶ You can find the corresponding link also on each lecture page.
- ▶ You see the questions of other participants and can upvote them (= “also relevant for me!”)



Tutorial Sessions

- ▶ One laptop for two students
⇒ working in pairs = learning from each others
Take this opportunity and also change pairs!
- ▶ School Laptops: Debian Bullseye with all the packages required for the tutorials installed.
Own laptops: OK, but might cause problem due to non-installed/different-version packages
VirtualBox Image: Allows you to run the system installed on the Laptops on your own computer. (Download the Image from the section “Computing” of the website).
- ▶ Topics covered in the tutorial sheets are typically too much ⇒ pick what you are most interested in and you can try the rest later (Tuesday’s and Friday’s session or at home)



Laptop and School Image

- ▶ Debian Bullseye with all the packages required for the tutorials installed. Download the Image from the section “Computing” of the website.
- ▶ **Login: account: student, password: student**
All passwords are actually “student”.
- ▶ We make heavy use of the terminal, but you are welcome to use the graphical file manager (“Dolphin”).
- ▶ For editing files use your favourite editor. If unsure, use `kate`.
- ▶ `student` has `sudo`-rights, so you can install additional software.
(Ask us for help if you just understood nothing and would like to install something nevertheless.)



Computing

There are two options besides the laptops

1. **Your own environment:** Use your own environment and install the required resources according to the instruction (+: it is what you use daily, -: you might face issues installing all resources)
2. **VirtualBox Image:** Use the VB Image provided in the VirtualBox application. (+: Things are tested, -: it differs from your environment)

You can find all details on the [computing](#) page.



Network

There are two possibilities to connect your personal device to the university network:

1. **uzh**

University of Zurich members preferably connect via the ssid uzh.
Use your UZH-Shortname and password.

2. **eduroam**

If you are working at a university that is part of the eduroam network, you can use your own eduroam login and password to connect (ask the IT department of YOUR university if you don't know the credentials).

ssid: eduroam



Social Evening

We will have a social evening on Tuesday, 12 July. (optional and self-paid)

Location: Linde Oberstrass (www.linde-oberstrass.ch)

Time: 18:30

How to get there: Take Tram Nr. 9 or 10 at “Universität Irchel” in the direction of UZH/ETHZ main buildings and hop out at “Winkelriedstrasse”



For those of you who want to join please fill in this [Doodle](#). Please put in your decision latest Tuesday 09:00!



ECTS Points / Confirmation

The course allows you to obtain 1 ECTS point.

We will open the UZH module booking tool (<http://www.students.uzh.ch/en/booking.html>)

We will inform you when the booking is ready.

Students with access to it, can book the module (PHY225) directly.

All students will receive a signed confirmation listing also the number of ECTS points.



Acknowledgement

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- ▶ Faculty of Science UZH and Physics Institute for the funding
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Coffee Breaks – the most important thing

We will have coffee breaks in the morning and the afternoon just outside this room (on the right hand side).

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**“Stop drinking coffee for a week, then start drinking it again.
It’s the same effect as rebooting your computer.”**