Moving my computer labs online

If you are doing your computer labs with Python, R, C or Octave, then your students can use our centralized JupyterLab platform noto to write and execute their code online without having to install anything on their computer.

https://noto.epfl.ch
Students work with Noto

- Students go to [https://noto.epfl.ch](https://noto.epfl.ch) with their web browser.
- They connect with their GASPAR login.
- They arrive on their personal online workspace (image right).

*Note:* it is best if students use a computer or a laptop (not a tablet or a smartphone).

The following slides describe more in details how to:
- **Create a notebook**
- **Execute code in a notebook**
- **Organise notebooks**

Don’t forget to [provide students with support](#) during the online lab!
Creating a “notebook”

- Select a **programming language** in the “Launcher” welcome page or by clicking on the “+” icon in the toolbar at the top left.
- This will create an **empty notebook** configured with the appropriate kernel (i.e. the engine that executes code)

Example: to create a notebook for Python, select “Python 3” in the launcher, as illustrated on the right.
Executing code in a notebook

- **Type your code** in the “cells” of the notebook.
  - You can create new cells by clicking on the “+” icon in the toolbar
- **To execute:**
  - Click on “play” icon in the toolbar at the top of the notebook or
  - Or use the keyboard shortcut “ctrl+enter”.
- The **result** will be displayed just below the cell.

Example: the code on the right displays the text “hello” in Python.

For a more detailed guide on how to use notebooks, see: [https://go.epfl.ch/noto-notebook-quickstart](https://go.epfl.ch/noto-notebook-quickstart)
Organising notebooks

- Notebooks can be **renamed** and **organized** into folders just as you would do on a computer.
- The left pane of the window lets you create new folders and move files by drag and drop, by using the toolbar or by right-clicking on elements.

Example: you could advise students to create a folder “ME-301-Labs” and name the notebook “Week4-Lab”, as illustrated.
Supporting students during the lab

It is important that students have a way to **ask questions** to your or to your TAs during the online lab.

You can:
- Create a **discussion forum** on moodle
- Use Zoom to hold **live video meetings**, with the help of your TAs

More details in the documentation here: [https://go.epfl.ch/online-lecturing-exercises](https://go.epfl.ch/online-lecturing-exercises)
To download their work on their own computer, students have to:

- Right click on the notebook in the left pane
- Select “Download” as illustrated
- Save the file on their computer
- The file will appear in their filesystem as “Week4-Lab.ipynb”

A notebook is a simple text file so students can submit their notebook to you by any mean you have chosen (moodle, email…).

See on the next slide how to manage students assignments with moodle.

Note: notebooks created on noto remain in students’ workspace permanently (unless deleted) and can be found back online at each connection.
Moodle “assignment” activities are a very helpful way to manage learning tasks that students have to submit to you:

- Students can submit their work by uploading files on moodle
- You can set up a deadline for submission
- You can retrieve student work by downloading their file
- You can also give students feedback and grade them directly online.

For more information on how to use the “assignment” feature of moodle, see Moodel Quick Start Guide. A detailed documentation on Moodle assignments is also available.
Running student’s notebooks for assessment and feedback

- **Retrieve** the student notebook file
- **Connect** to noto in your web browser,
- **Drag and drop** the file onto your workspace in the left pane of the window
- **Execute** the code in the notebook:
  - Select a cell and click on the “play” icon
  - Or use the keyboard shortcut “ctrl+enter”
  - All the code cells of a notebook can be run in one click by using the menu “Run” > ”Run all cells”.

[Image of a menu with options to run selected cells and all cells]
Getting help on noto

- If you need **specific libraries**, please test if they are already installed on noto. If not, please send us an email: noto-support@groupes.epfl.ch

- If your class has **more than 50 students**, please let us know so that we can assist and monitor the load on the server.

More information on noto: http://go.epfl.ch/notebooks

If you need support on noto: noto-support@groupes.epfl.ch