

# Python Lecture at KIS 2020

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Please note: This program may be understood as a broad guideline and rough timetable on topics. As such it may be subject to changes before and during the lecture.

## 1 Basics

22.04. - 24.04. + 27.04 - 29.04. (intensive course, one lecture per day and per topic)

- 1.1 Installation, GitLab introduction, DataCamp and First Steps
- 1.2 Basic Operations, Types and Loops
- 1.3 Functions, Methods and Scope
- 1.4 Scripts, Modules, Packages and Good Practices
- 1.5 Input and Output, Object-oriented Programming, Why Python?
- 1.6 git and GitLab

## 2 Advanced Topics: Data Structures, Data Handling and Visualization

One lecture each week every Wednesday 09:30, starting 06.05.

- 2.1 Basic Data Structures and Numerics with numpy and scipy
- 2.2 Visualization with matplotlib
- 2.3 Advanced Data Structures and Statistics with pandas

## 3 Specific Topics

One lecture each week every Wednesday 09:30, starting 03.06.

- 3.1 Advanced Object-oriented Programming
- 3.2 Efficient Debugging, Optimization and Parallel Programming
- 3.3 Utilities for solar physicists with sunpy and astropy