

Python Basics

(pass/fail)

Form of examination: 75% of attendance is required to pass the module. In addition, the students will have to work on an individual project given by the lecturers.

- SEMESTER 1, 2021 -

LECTURERS

Oliver Ettrich, PhD candidate (oliver.ettrich@the-klu.org)

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MODULE DATES

Lecture Number	Date	Time
1	Tue, 07.09.21	16.15-19.30
2	Tue, 14.09.21	16.15-19.30
3	Thu, 23.09.21	08.30-11.45
4	Fri, 08.10.21	08.30-11.45
5	Tue, 12.10.21	16.15-19.30
6	Thu, 21.10.21	10.15-13.30

MODULE OBJECTIVES:

Python is a very powerful programming language that is widely used across various fields like Data Science, Business Analytics, and Software Development. It is a programming language that is easily accessible to newcomers to computational programming, i.e., no prior knowledge or experience in programming is required for this course. The primary objective of this course is to teach students theoretical concepts of Python and, most importantly, to equip them with hands-on programming experience that allows them to implement own projects. After this course, students are also able to quickly learn languages other than Python, such as R, Julia, etc.

MODULE STRUCTURE AND REQUIRED READINGS:

- Lecture 1: We show students how to install Python and corresponding working environments (Jupyter Notebook). Students write the 'Hello world' program.
- Lecture 2: We introduce students to different data types (strings, boolean/binary, integer, float, etc.) and show them how to manipulate data.
- Lecture 3: Students get to know logical operators, if-statements, and loops.
- Lecture 4: We introduce students to *dataframes*. Students learn how to access rows and columns of *dataframes*, and how to manipulate them. We will also show them how to produce first descriptive statistics based on *dataframes*.
- Lecture 5: We show students how to visualize data, above all relationships between variables.

- Lecture 6: Students can choose among a set of topics (web-scraping, fundamentals of regression analysis, etc.). We will infer student preferences in lecture 5.

Reading and other material

- There are no mandatory readings for this class.

Literature	Session / Date of use	Mandatory (M) / Recommen- ded (R)	Pre- reading: yes / no
Book: A Beginners Guide to Python 3 Programming, by John Hunt	Throughout the course (We will provide you with an electronic copy of the book)	R	No
Online Resource to fix code bugs: https://stackoverflow.com/questions/tagged/python			
Online Resource to practice coding: https://www.w3schools.com/python/			

ADDITIONAL READINGS

We will make the course material available on a github repository, probably by the end of August. On this repo, we will provide additional readings and exercise material.

Note 1:

For this class to be a success, it is key that you actively participate in the practical exercises, that you ask questions whenever you do not fully follow along, and that you do your own Web Research if you run into issues (and none of us is around).

Note 2:

You need to bring your own laptop to the course. No tablets are allowed. Since the two of us work with Windows, it may take us a bit longer to help you with Linux-specific Python issue. So, if you have the choice between Windows and Linux, we would encourage you to go with Windows.