

Introduction to programming in Python

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MARUM – Center for Marine Environmental Sciences, University of Bremen

3, 4 and 6 March 2025

09.00 – 13.00 hrs. (+optional 14.00-17.00 hrs. on 6 March)

MARUM I, room 2060



Objectives

Python is an open-source, general-purpose programming language that has gained popularity in the scientific community. It comes with a rich collection of pre-existing building blocks of classical numerical methods, plotting or data processing tools. Python's syntax is simple, avoiding strange symbols or long routine specifications that would distract the reader from a mathematical or scientific understanding of the code.

This course provides an introduction to the effective use of Python for everyday research needs. By the end of the course, participants will be able to read and write data in a variety of formats, intuitively work with and perform simple statistical analyses on their data, and present their analysis in a variety of graphs.

Topics include

- Installation of Python (using Anaconda)
- Installation & usage of Jupyter Notebooks
- Python syntax and structure
- Variables, types and values
- Operators and operands
- Conditionals
- Iteration
- Tuples, lists and dictionaries
- Functions
- Classes and objects
- Python modules
- Handling scientific data

Format

The course will consist of lectures/demonstrations, but will also include time for independent work on assignments and collaborative discussion of code solutions and other questions you may have.

On the afternoon of the final day (6 March), participants will have the opportunity to work on their own Python projects with the support of the instructors.

Software used in the course

The course will use Python and Jupyter notebooks. A convenient software bundle can be downloaded from Anaconda (<https://www.anaconda.com/>) (not necessary beforehand; this will be part of the course).

For those who do not want to or cannot install software on their computers, we will use Google Collab, a tool that requires a Google account.

Target group

Beginners with no prior experience in using Python

Registration

To register for this course, please visit

<https://www.marum.de/en/research-training/2025/2025-03-03.html>

Please note that your registration will be binding.

If we don't receive a critical number of registrations by **14 February 2025**, the course will have to be cancelled.

Please direct any enquiries about this event to early-career@marum.de.