

Workshop

Introduction to Python

Organisational details

Instructor:	Dr Tobias Keller
Dates:	November 4 – 6, 9.00 am – 3.00 pm respectively
Venue:	Room 050, Licher Str. 68, 35394 Giessen
ECTS:	2
Max. participants:	12

Objectives

Participants will learn Python fundamentals for real data work, build reproducible project environments, use git for version control, and get hands-on experience with AI-assisted coding via GitHub Copilot.

While this course serves as a standalone introduction to Python, is also an ideal complement for those taking the courses "Data Preparation with Python" and "Machine Learning with Python".

Content and methods

The course covers the following core topics:

- Python basics – variables, types, control flow, functions, classes, scripts
- Data structures – lists, dicts, and tabular data with pandas
- Project structure – packages, imports, pyproject.toml
- Tooling – Integrated Development Environment (IDE), dependency management and virtual environments
- Best practices from Software Development – testing, logging, version control with git, AI-assisted development

Hands-on tutorials and exercises will make up about 90 per cent of the course time. Participants will complete those using their own computers. Please see the preparation requirements below for a list of software that needs to be installed to that end. The exercises will be based on exemplary datasets that will be provided to the participants before the course.

To gain the ECTS credit points participants have to:

- Follow the installation instructions provided in time before the course,
- Download and extract the course material and exemplary datasets that will be provided in time before the course,
- Actively participate during the workshop.

Target group

Doctoral candidates or postdoctoral researchers doing empirical research or intending to work as data scientists.

Course language

English (German, if only German speaking participants)

Please note: As this is an English language course proficiency in English at the C1 level of competency is required.

About the Instructor

Dr Tobias Keller has been working as data scientist at ZERO.ONE.DATA, the big data startup of Deutsche Bahn AG since 2016. He consults on and applies machine learning and statistics for artificial intelligence systems in a big data environment. Furthermore, he teaches data science at Deutsche Bahn, in the doctoral education programmes at Justus Liebig University Giessen, and in the doctoral programme and master programme at WHU – Otto Beisheim School of Management. His research interests include machine learning and artificial intelligence, finance and accounting, strategic management.

Registration

By October 24, 2026 via e-mail at info@ggs.uni-giessen.de.