

Data Science: Programming with Python (S17)
07 – 11 July 2025

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Please note that on all days, both during the morning and afternoon session, a short break is scheduled. Coffee, tea and lunch will be provided.

Day	Time	Type	Description	Location
Monday	09:00 -10:30	Lecture + exercise session 1	Introduction to the course (30 min) Unit 1.1: Getting started with Python: The programming environment, editing and running Python programs, "Hello World!", simple output, sequential execution,	Utrecht Science Park Exact location to be announced later
	10:45 -12:15	Lecture + exercise session 2	Unit 1.2: Arithmetic expressions, variables, formatted output, interactive input + Exercises	
	12:15 – 13:45	Lunch	In Educatorium	
	13:45 – 15:15	Lecture + exercise session 3	Unit 1.3: Conditional branching + Exercises	
	15:30-17:00	Lecture + exercise session 4	Unit 1.4: Loops (while- and for-loops) + Exercises	
Tuesday	09:00 - 10:30	Lecture + exercise session 1	Unit 2.1: Functions and modules, the Python standard library, the Python Package Index (PyPI) + Exercises	
	10:45-12:15	Lecture + exercise session 2	Unit 2.2: Data Structures (Lists, Tuples) + Exercises	
	12:15 – 13:45	Lunch	In Educatorium	
	13:45 – 15:15	Lecture + exercise session 3	Unit 2.3: Data Structures (Dictionaries and Sets) + Exercises	
	15:30-16:45	Project	Group/Individual projects (selection of dataset, formulation of research questions, find Python packages)	
	16:45-17:00	Wrap up	Discussion and wrap up	

For information about the (online) Social Programme, please have a look at the [Utrecht Summer School website!](#)

Wednesday	09:00 -10:30	Lecture + exercise session 1	Unit 3.1: Object-Oriented Programming (working with objects) + Exercises
	10:45-12:15	Lecture + exercise session 2	Unit 3.2: tabular data, CSV files, Pandas data frames + Exercises
	12:15 – 13:45	Lunch	In Educatorium
	13:45 – 15:15	Lecture + exercise session 3	Unit 3.3: Joining and grouping data frames and variable correlations + Exercises
	15:30 – 16:45	Project	Work on individual/group project (start coding, read your file/files, implement functions)
	16:45-17:00	Wrap up	Discussion and wrap up
Thursday	09:00 -10:30	Lecture + exercise session 1	Unit 4.1: Data visualization with matplotlib + Exercises
	10:45-12:15	Lecture + exercise session 2	Unit 4.2: Working with date and time + Exercises
	12:15 – 13:45	Lunch	In Educatorium
	13:45 – 15:15	Lecture + exercise session 3	Unit 4.3: Matrix computations with the numpy package + Exercises
	15:30 – 16:45	Project	Work on individual/group project (further analysis, produce plots, results)
	16:45-17:00	Wrap up	Discussion and wrap up
Friday	09:00 -10:30	Lecture	Unit 5.1: Error handling
	10:45-12:15	Presentations	Project presentations (5-10 min each)
	12:15 – 13:45	Lunch	In Educatorium
	13:45 – 15:15	Presentations	Project presentations (5-10 min each)
	15:30 – 17:00	Lecture	Unit 5.2: Large Language Models for Programming