

## Python for Data Analysis (C004618)

**Cursusomvang** *(nominale waarden; effectieve waarden kunnen verschillen per opleiding)*

**Studiepunten 3.0** **Studietijd 90 u**

**Aanbodsessies in academiejaar 2026-2027**

A (semester 1) Engels Gent

**Lesgevers in academiejaar 2026-2027**

Plevoets, Koen WE02 Verantwoordelijk lesgever

**Aangeboden in onderstaande opleidingen in 2026-2027**

	stptn	aanbodsessie
<a href="#">Master of Science in Economics</a>	3	A
<a href="#">Master of Science in Economics (Double Degree)</a>	3	A
<a href="#">Master of Science in Statistical Data Analysis</a>	3	A

**Onderwijstalen**

Engels

**Trefwoorden**

Statistical programming language Python, principles of data management, efficiency, coding style, reproducible reporting

**Situering**

The global objective of this course is to provide students with a thorough basis and practical skills for the handling and management of data with accompanying information.

**Inhoud**

- 1 Importance of information management in general.
- 2 How to use data sources?
- 3 Introduction to (statistical) programming in Python (Basic data types, functions and control flow, data analysis with NumPy and pandas, visualization with Matplotlib and seaborn, statistical inference and modelling with SciPy and statsmodels).
- 4 Error correction, archiving, confidentiality, ethics of data handling.
- 5 Structuring scripts for reproducibility and cooperation with other scientists.
- 6 Optimizing, debugging and checking code.

**Begincompetenties**

Basic notions of statistical data analysis are recommended. No prior programming skills are required.

**Eindcompetenties**

- 1 The student knows the basics of data analysis with the Python software.
- 2 The student can use software to query data bases, reshape data, produce graphs, descriptive statistics and reports.
- 3 The student can write scripts/programs in Python.
- 4 The student can contribute to a group effort for a Python programming project.
- 5 The student can report on programming activities and can provide a summary report of a database.
- 6 The student can implement good programming practices.
- 7 The student is aware of ethical aspects of data handling.

**Creditcontractvoorwaarde**

Toelating tot dit opleidingsonderdeel via creditcontract is mogelijk na gunstige beoordeling van de competenties

## **Examencontractvoorwaarde**

Dit opleidingsonderdeel kan niet via examencontract gevolgd worden

## **Didactische werkvormen**

Werkcollege, Hoorcollege, Zelfstandig werk

## **Studiemateriaal**

Type: Slides

Naam: Python for data analysis

Richtprijs: Gratis of betaald door opleiding

Optioneel: nee

Taal : Engels

Aantal slides : 500

Beschikbaar op Ufora : Ja

## **Referenties**

- Haslwanter, T. (2016). An introduction to statistics with Python. New York: Springer.
- McKinney, W. (2018). Python for data analysis. Sebastopol: O'Reilly.
- VanderPlas, J. (2017). Python data science handbook. Sebastopol: O'Reilly

## **Vakinhoudelijke studiebegeleiding**

Numerous exercises are being solved during both the practical sessions and at home. Students can ask questions or feedback during the practical sessions or via an online discussion forum.

## **Evaluatiemomenten**

periodegebonden en niet-periodegebonden evaluatie

## **Evaluatievormen bij periodegebonden evaluatie in de eerste examenperiode**

Schriftelijke evaluatie open boek

## **Evaluatievormen bij periodegebonden evaluatie in de tweede examenperiode**

Schriftelijke evaluatie open boek

## **Evaluatievormen bij niet-periodegebonden evaluatie**

Vaardigheidstest, Schriftelijke evaluatie open boek, Werkstuk

## **Tweede examenkans in geval van niet-periodegebonden evaluatie**

Examen in de tweede examenperiode is mogelijk

## **Toelichtingen bij de evaluatievormen**

Permanent: Weekly skills tests on a course chapter and one homework report on a data-analytical project.

Periodical: Report on a data-analytical project.

## **Eindscoreberekening**

The score depends on the weekly skills tests (totalling to 10%, i.e. 2/20), the homework (10%, i.e. 2/20), and the periodical evaluation (80%, i.e. 16/20). The student needs to pass for the periodical evaluation and the total score must be at least 10/20.