UNIVERSITEIT GENT

Studiefiche

Vanaf academiejaar 2025-2026

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	WEO2	Verantwoordelijk lesgever

Aangeboden in onderstaande opleidingen in 2026-2027	**stptn**	**aanbodsessie**
Master of Science in Economics	3	A
Master of Science in Economics (Double Degree)	3	A
Master of Science in Statistical Data Analysis	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

Introductory course to statistics.

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 practical sessions and PC labs. Students get extra exercises that can be solved either during the practical sessions and PC labs, or at home. Students can ask questions during the PC labs and they can ask for additional feedback and exercises they made at home.

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: There will be a take home problem.
Periodical: Written examination to evaluate the extent to which students mastered the material and can actually perform analysis using the respective software packages.

Eindscoreberekening

If the student fails for this course in the first examination period and if he/she wants a retake in the second examination period, the non-periodical evaluation will be presented in a revised form in the second examination period. The score depends on a take home problem (10%), and a periodical evaluation (90%). The student needs to pass for the periodical evaluation and the total score must be at least 10/20.