![stackfuel logo]

Introductory course • Curriculum

Introduction to Data Science

Preparation for training as a **Data Scientist**
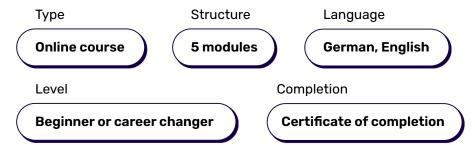
Course content.

The goal of the introductory course is to provide you with essential prior knowledge and skills that you need for training in data science. You will learn important mathematical basics, such as handling vectors, matrices and probabilities, which are necessary for understanding data science methods.

You will apply what you have learned with the Python programming language in connection with application scenarios in the field of data science. The course is therefore also a test of your skills in using the Python programming language.
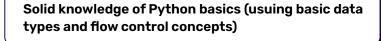
In a nutshell:

> Creating structured scripts in the Python programming language
> Creating recommender systems using the Python package numpy
> Recognizing the most important probability distributions

At a glance.

Type
Online course

Structure
5 modules

Language
German, English

Level
Beginner or career changer

Completion
Certificate of completion

Prerequisites
Solid knowledge of Python basics (usuing basic data types and flow control concepts)

Target group
The course is suitable for you and your career plans if you have a degree, ideally in the fields of mathematics, computer science, natural sciences, technology, business administration, (business) informatics or a comparable qualification or previous experience in a related field.

Agenda.

Introduction to the Learning environment

Objectives:

> Getting to know and converting the most important data types

> Writing code according to the DRY principle

> Organizing and preparing data in DataFrames

Content:

> Welcome session

> Course schedule and look at building blocks

> Introduction to the learning environment

> Python basics:
  - Variables and data types
  - Functions and methods
  - Flow control commands
  - numpy arrays
  - Pandas DataFrames

Linear Algebra Part 1

Objective:

> Getting to know the basics of linear algebra

Content:

> Vectors, matrices and tensors

> Vector and matrix multiplication

> Dot product

> Metrics and norms

Linear Algebra Part 2

Objective:

> Calculating similarity of products using the basics of linear algebra

Content:

> Cosine similarity

> Euclidean norm

> Product recommendation based on similarity

Agenda.

Statistical Principles Part 1

Objective:

> Getting to know the most important discrete and continuous probability distributions

Content:

> Probabilities
> Discrete probability distributions:
>   • Binomial distribution
>   • Negative binomial distribution
>   • Poisson distribution
> Continuous probability distributions:
>   • Uniform distribution
>   • Normal distribution
>   • Exponential distribution
> Mean and standard deviation
> Making predictions with distributions

Statistical Principles Part 2

Objective:

> Using Monte-Carlo algorithms for simple simulations

Content:

> Law of large numbers
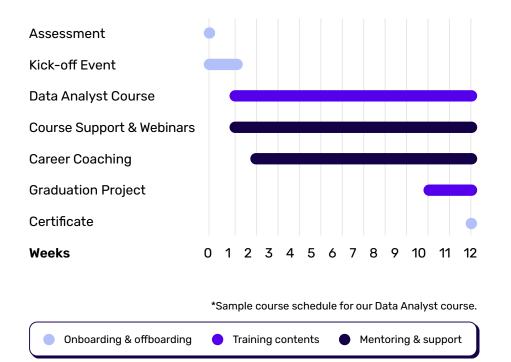> Central limit theorem
> Monte-Carlo simulation

About StackFuel.

We are your strategic learning partner, suitable for every career level and professional orientation.

Whether you're changing careers, an employee or a manager, our certified and state-supported training courses in data, AI and programming will keep you up to date with the latest technologies.

Course schedule.

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
Assessment
Kick-off Event
Data Analyst Course
Course Support & Webinars
Career Coaching
Graduation Project
Certificate
Weeks 0 1 2 3 4 5 6 7 8 9 10 11 12

*Sample course schedule for our Data Analyst course.

● Onboarding & offboarding ● Training contents ● Mentoring & support

Training philosophy.

Online & flexible
Do your course part-time or full-time and learn 100% online in your browser on your PC or laptop at home.

Hands-on practice with real-life projects
In our Data Lab you will write your own algorithms with industrial data sets in interactive exercises and coding challenges.

Mentoring & career coaching
Your personal mentoring team will accompany you with coaching, feedback, and weekly group webinars.

Certified & eligible
As a certified training provider, you can get our courses fully subsidized by the job center and the employment agency.

Facts.

91% completion rate

80% interactive exercises

20% expert videos & text lessons

+150.000 learning hours in the Data Lab

4,3 von 5 recommendation rate

Sponsorship opportunities.

Installments or part payment

Use our installments or part payment options to spread out the costs of your course over several months so you can remain financially flexible.

Education voucher

With an education voucher (Bildungsgutschein in German), you can get your course financed up to 100% by the Jobcenter or the Employment Office, if you are currently out of work or looking for employment.

Training opportunities act

If you are working, you can get your course partially or completely funded by your employer thanks to the Training Opportunities Act (Qualifiyierungschancengesetz in German) - regardless of your qualifications, age or the size of the company.

StackFuel scholarships

We regularly award various scholarships for our courses, to promote more diversity in the field of data. We want to encourage more people to take an interest in programming, and more women to work in data roles.
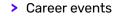
Support & mentoring.

Coaching

> Assessment
> Final project and evaluation
> 1:1 project feedback consultation
> Official certificate of completion

Personal mentoring

> Kick-off session
> Webinars with other course participants
> Support via email or phone
> Online forum

Career services

> CV and application coaching
> Talent pool and career intros
> Data community
> Career events

Ready to enroll?

Get in touch with our consultants and build up the skills you need!

Maria Schwenke

Education Advisor

Book free consultation