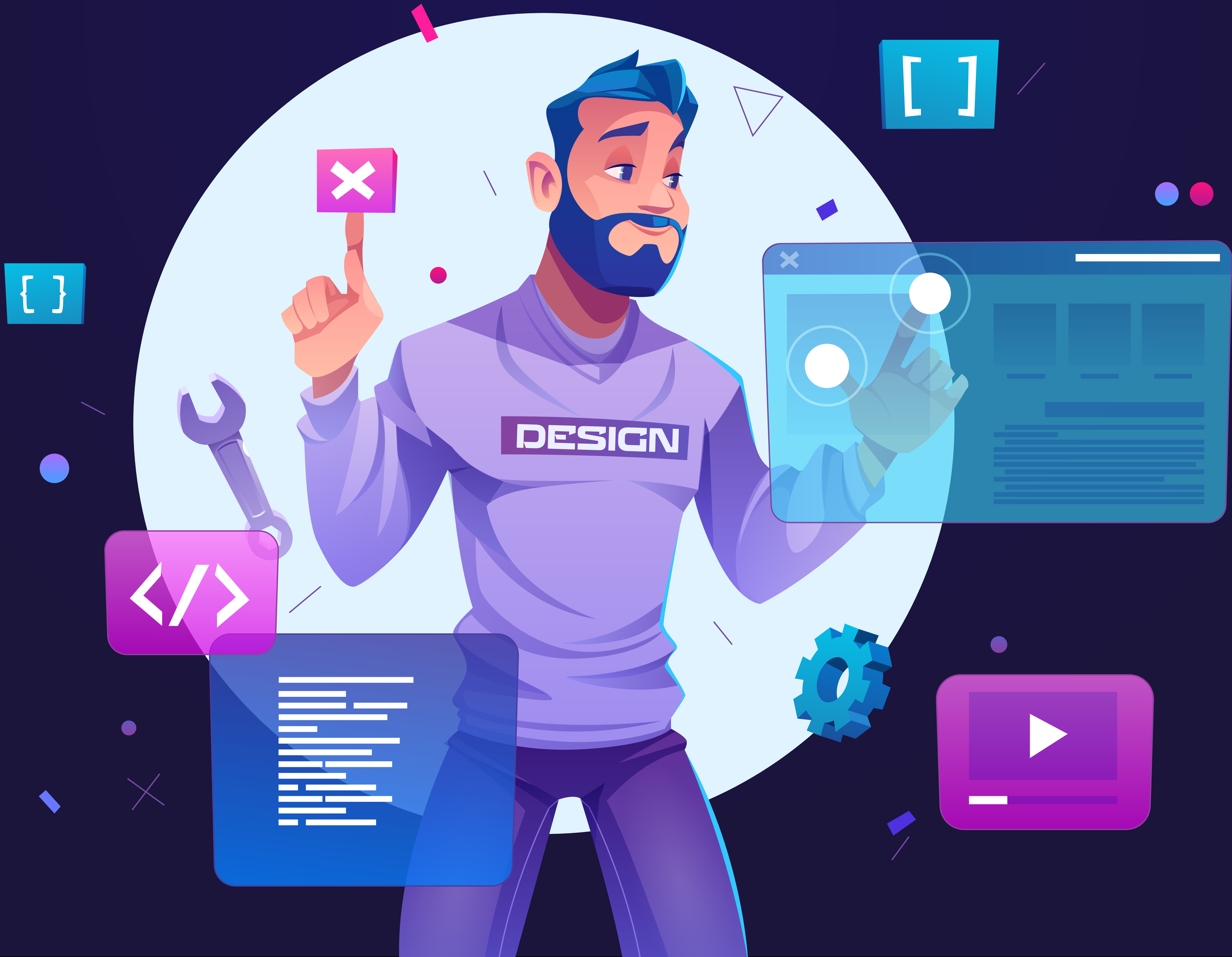
TEACHNOOK

# Python for Data Science



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# At a Glance

This introduction to Python will kickstart your learning of Python for data science, as well as programming in general. This beginner-friendly Python course will take you from zero to programming in Python in a matter of hours. Upon its completion, you'll be able to write your own Python scripts. If you want to learn Python from scratch, this free course is for you.

## ABOUT THIS COURSE

This introduction to Python will kickstart your learning of Python for data science, as well asprogramming in general. This beginner-friendly Python course will take you from zero to programming in Python in a matter of hours. Upon its completion, you'll be able to write your own Python scripts and perform basic hands-on data analysis using our Jupyter-based lab environment. If you want to learn Python from scratch, thisfree course is for you. You can start creating your own data science projects and collaborating with other data scientists using IBM Watson Studio. When you sign up, you get free access to Watson Studio. Start now and take advantage of this platform

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# COURSE SYLLABUS

## Module 1- Python Basics

- Your first program
- Types
- Expressions and Variables
- String Operations

## Module 2- Python Data Structures

- Lists and Tuples
- Sets
- Dictionaries

## Module 3- Python Programming Fundamentals

- Conditions and Branching
- Loops
- Functions
- Objects and Classes

## Module 4- Working with Data in Python

- Reading files with open
- Writing files with open
- Loading data with Pandas
- Working with and Saving data with Pandas

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## Module 5- Fudamentals & tools

- Introduction & need
- Types of data - NOIR
- Introduction to pandas
- Numpy arrays v/s series v/s dataframe

## Module 6- Visulaization & cleaning

- Various plots & graphs
- Data sources
- Missing Values
- Describes & info Methods

## Module 7- Feature selection

- Correlation & variance
- Domain understanding
- Feature & label split

## Module 8- Normalization & transformation

- Normalization
- Dimensionality Reduction
- Label encoding
- One hot encoding

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## Module 9- Cross Validations

- Linear split
- Train-test split
- KFold CV
- Stratified KFold
- Leave onw out CV

## Module 10- Add- on topics

- Linear Discriminant Analysis
- Kernal PCA
- Data Scraping

## Module 11- Programming Elements

- Keywords & variables
- Data types- Numbers & Strings
- Operation in python
- Hands-on implementation

## Module 12 - Conditions & loops

- Identation & scopes
- if, else & elif blocks
- introduction to loops
- for & while loops
- Break & continue statements

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## Module 13- Data Structures

- Lists, Tuples, Sets dictionaries
- CRUD operatons on data structures
- Building rock paper scissor with console

## Module 14 - Functions & Exception Handling

- Introduction to functions
- Postional & keyword arguements
- Return statements
- Try, catch & finally block

## Module 15 - Add-on topics

- File handling - i/o
- Numpy arrays
- case studies

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