

Python Development



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Course overview



Duration: 4 months

Intensity: 3 times a week =
8 hours of practice with the teacher every week*

Total of 48 lessons = 128 hours of practice

*This is practice only. Overall, you would need to allocate **20 hours a week** to read the theory and complete home assignments.

Python Development

Requirements for students

- A basic understanding of what Python is
- Skills of working with browsers and search engines
- Intermediate English to read the resources and documentation
- Logical thinking
- Coding experience is an advantage

PC Requirements

- 1.8 GHz or faster processor (min 4 core);
- 4 Gb RAM (8Gb recommended);
- at least 20 Gb disk space;
- webcam (720p) and microphone.

Teachers. Practicing specialists who care about students

1. All our teachers are Middle+ or Senior practicing specialists of their fields.
2. Each teacher passes three stages of the interview: assessment of technical skills, presentation of teaching skills, and testing for compliance with our values.
3. There are 70+ teachers in our community who help each other grow through in-house workshops, webinars, and knowledge sharing.



This is the course for you if...

- ▶ **You are starting or switching a career to Back-End development**
Your goal is to enter the IT field and Python seems like the way to go. With Python, you can design websites, create applications, bots, and scripts of varying difficulty.
- ▶ **You've already dipped your toes into Python**
Be it through an online course or a set of videos about Python basics, you've already covered a bit of ground. Now, you'd like to consolidate your knowledge and practice with guidance from a senior developer.
- ▶ **You know another programming language**
Say, you're a Front-End developer willing to develop the server side of web applications as well.
- ▶ **You'd like to switch to development from another IT profession**
You already know the IT field and have tried some other IT specialties, so development is your next stop. Or maybe you are a QA Manual Engineer willing to try out QA Automation.
- ▶ **You're striving to automate routine tasks or learn the basic technical aspects of work**
Python can come in handy for doctors, accountants, and managers alike. Not all of our graduates are developers – we help many professionals automate their work with Python or improve communication with the technical team.

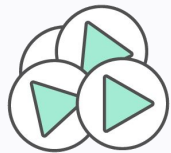


The studying process

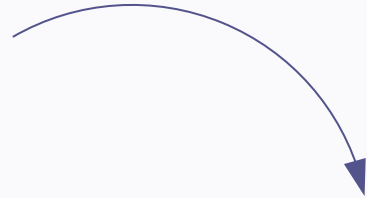


1. Theory - on your own

Videos, useful resources, homework, and tests are all in our LMS



3. Do the home assignment



2. Practice in group with the teacher



Lesson flow



Analyzing questions about theory which the students studied independently via LMS and Beetroot Academy materials

Feedback on the homework from your teacher and an overview of typical questions

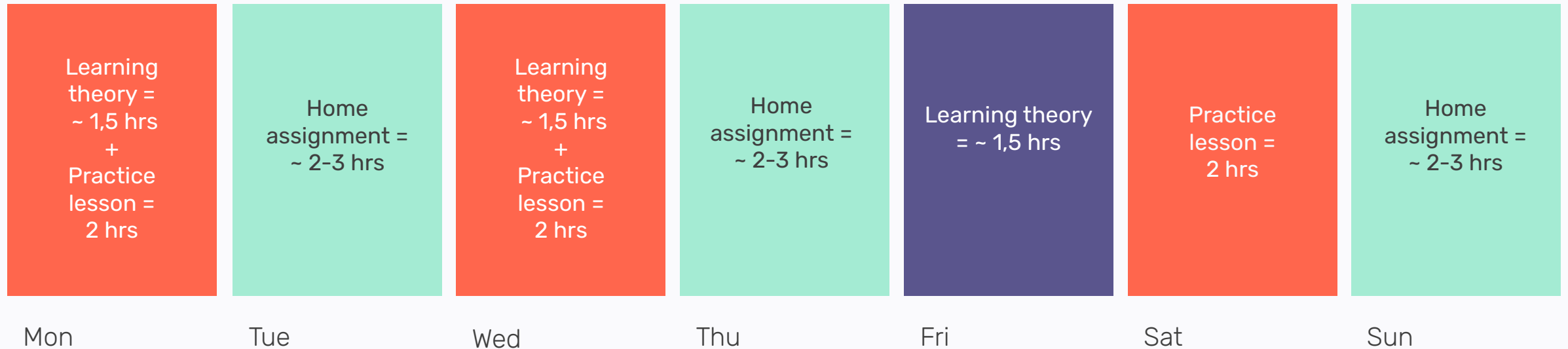


Demonstration of practical cases and examples by the teacher

A practical assignment for the group. The teacher gives personal feedback to everyone



Your weekly schedule*



An average of 20 studying hours a week**

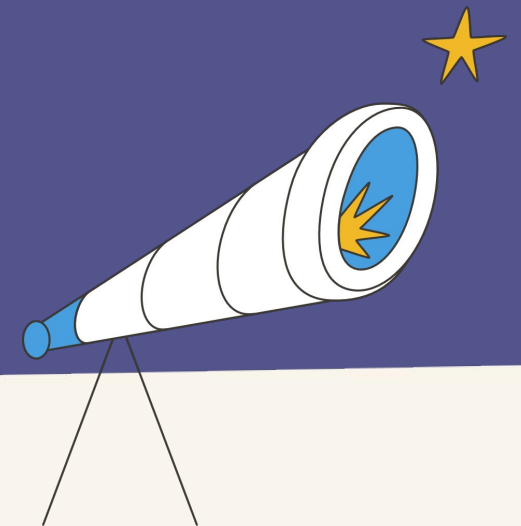
*Please note that your schedule distribution may be different depending on what your group agrees on.

**This is the average amount of time per week for successful course completion. Some weeks would require more time than others.

Modules



Module 1. Python basics	9 topics, 24 hours
Module 2. Advanced Python with OOP	12 topics, 32 hours
Module 3. Classical computer science, algorithms and data structures	9 topics, 24 hours
Module 4. Concurrent programming	6 topics, 16 hours
Module 5. Web frameworks, ORM and final project	12 topics, 32 hours



Course program in detail

Module 1 Python basics (9 topics, 24 hours)

1. First steps
2. Variables and simple data types
3. Booleans and control structures with while iteration
4. Creating a simple console version
5. List, tuples, and sets
6. Dictionaries and for loops
7. Functions
8. Comprehensions and Exceptions
9. Files I/O and Context Managers, JSON

Module 2 Advanced Python with OOP (12 topics, 32 hours)

10. Classes, scope, and namespaces
11. Inheritance
12. Polymorphism
13. Functions as first-class objects
14. Decorators
15. Property decorators and recap
16. Iterators and Generators
17. Unit testing
18. Modules and standard library
19. Context managers extended
20. Python type checking
21. **Practice: Calculator**

Course program in detail

Module 3

Classical computer science,
algorithms and data structures
(9 topics, 24 hours)

- 22. Big O notation and python built-in data structures
- 23. Recursion
- 24. Data structures (Stack, Queue, Deque)
- 25. Data structures (Lists)
- 26. Searching algorithms and hashing
- 27. Sorting algorithms
- 28. Trees and trees algorithms. Part 1
- 29. Trees and trees algorithms. Part 2
- 30. Graphs and graph algorithms

Module 4

Concurrent programming
(6 topics, 16 hours)

- 31. Basics of networking programming
- 32. Introduction to HTTP, making HTTP requests
- 33. Threads
- 34. Multiprocessing
- 35. Asyncio
- 36. Practice: Creating a chat

Course program in detail

Module 5

Web frameworks, ORM
and Final project
(12 topics, 32 hours)

37. SQL basics. Part 1

38. SQL basics. Part 2

39. ORM basic SQL Alchemy

40. Flask. Part 1

41. Flask. Part 2

42. Flask. Part 3. Celery i Redis

43. Telegram API

44. Working on the final project. Part 1

45. Working on the final project. Part 2

46. Working on the final project. Part 3

47. Working on the final project. Part 4

48. Project presentation

Your future CV will include

Trainee/Junior Python Developer

Education

June 2022 – October 2022

Python Development course
at Beetroot Academy



- ✓ Knowledge of basic data structures and modules
- ✓ Experience with Git and GitHub
- ✓ Knowledge of OOP principles and how to apply them
- ✓ Experience with SQL requests and relational databases
- ✓ Familiarity with HTTP specifics
- ✓ Experience in writing and using REST APIs
- ✓ Ability to write unit and integration tests
- ✓ Experience in web development with Flask
- ✓ Basic knowledge of HTML, CSS, JavaScript
- ✓ Teamwork experience and collaboration skills
- ✓ Experience with Telegram API
- ✓ Personal project implementation experience in IDE

Information about the Authors

Isaac Gonzalez

5+ years of experience (Full-Stack specialist)

Worked for startups

Neuralis – suicide prevention with machine learning.
Made in python.

Grey Parrot – voice recognition and transcription software for SOS Alarm, helping the dispatchers in live emergency calls. Also made purely in python.

Detect – a motorcycle app that can automatically detect when you have crashed and send emergency calls to 112/911 and ICE contacts.
Worked with React Native iOS, Android, and Mapbox.



Information about the Authors

Vitalii Guliay

5+ years of experience

Tech stack: Python, JavaScript, Go (web projects)

Worked for **Beetroot** and other projects (under NDA)



Career Counseling

After mastering the technical skills in the course, your next step in building a successful IT career would be to create your CV and get ready for future interviews. Career counseling will help you be presentable in the eyes of a potential employer.

Benefits of Beetroot Academy Career Counseling:

- Understand what makes a successful CV and how to make one for yourself;
- Learn best practices of preparing for interviews and passing them;
- Find out what to look for when choosing an employer;
- Master business correspondence with recruiters and HRs

Graduation

The final project of the course is a server created with Flask, integration with Twitter API, or a Telegram bot for visualization.

After the course, we share contacts of students and (if applicable) a video recording of final projects presentations with partner companies to promote employment. We take into account the students' consent for sharing personal data as well as their course results.

At the end of the course, you will receive an e-certificate of completion*.

**given you do the homework and the final project*



Beetroot Academy's Alumni



Yuliia Holub

Beetroot Academy is an excellent example of a new era of education where every teacher cares about students' development. Students' results and interests are a top priority. There's a friendly atmosphere and no hierarchy.



Artem Melnyk

Great school with individual approach to each student. If you want to learn something new or progress in a chosen field, this is the place for you. Highly recommend.



Anton Tymoshenko

Super cool courses. Lots of interesting practical tasks. Exceptional team and great atmosphere. I'm grateful for the knowledge, experience, and networking.



Olha Ivanytska

Four months of training flew by. It was so informative, friendly, and fun that I'm bound to want some more! Very grateful for a solid base and desire to never stop learning.

About Beetroot Academy

Beetroot Academy is an impact-driven IT school that helps people to start and improve their career in tech by offering reskilling and upskilling courses.

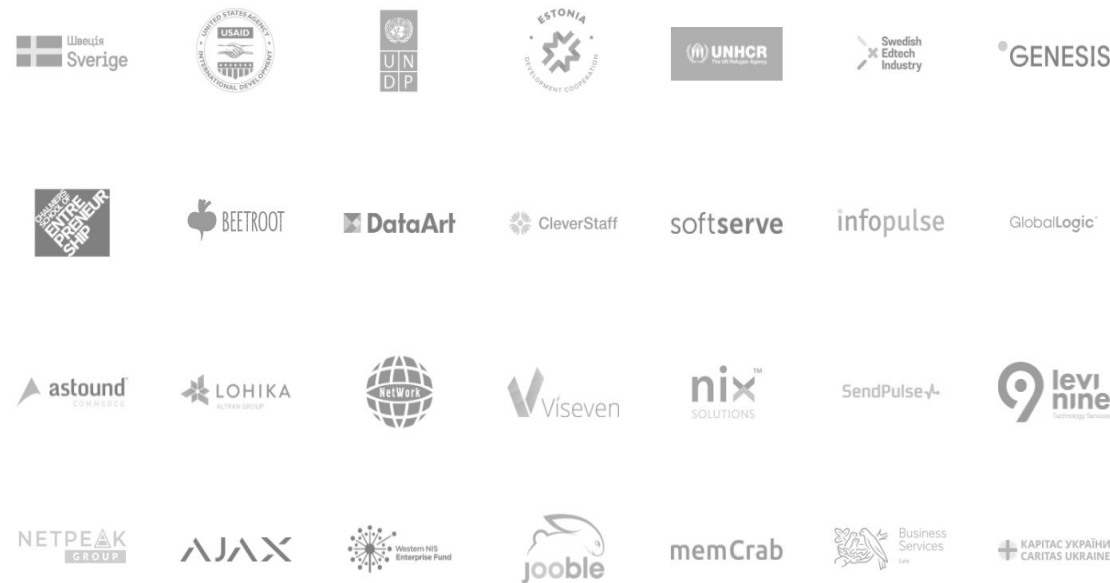
Since 2014, Beetroot Academy has educated 5,300+ graduates in Ukraine and Sweden.

We team up with businesses to equip teams or individual professionals with needed tech skills to reskill - change career path to face digitalization; and upskill - add on new competencies within tech.

Our educational courses consist of practical and intensive learning modules in a broad spectrum of tech domains suitable for a team or individual professionals.

 beetrootacademy.se

Trusted by recognized companies and institutions



Our advantages

Teaching Methodology

All course programs are developed by practicing specialists and meet the market requirements. We apply the flipped classroom method, where our students study theory at home, and then come to classes and practice with the teacher.

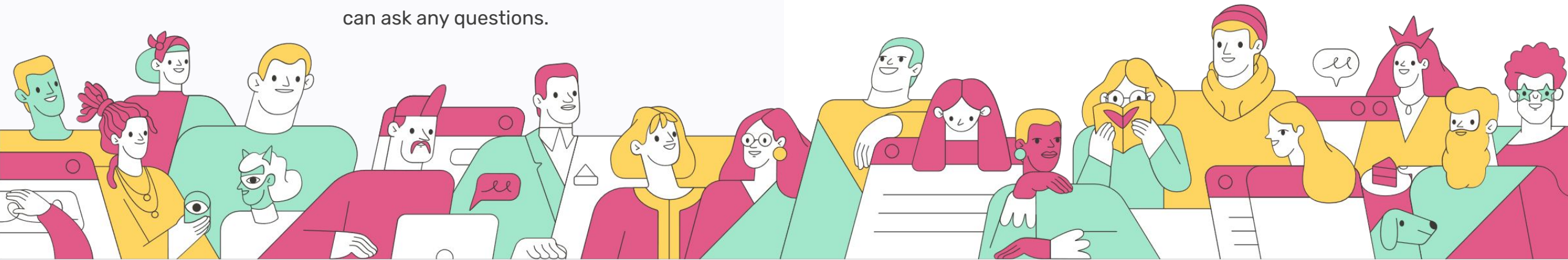
Agile, student-centered Approach

Beetroot Academy is a Swedish-Ukrainian school. There is no strict hierarchy within our team, and we make sure to keep the atmosphere friendly.

We want you to feel relaxed in class - students and teachers are equal, and you can ask any questions.

Social impact driver enterprise

Our goal is world-class high-quality IT education. Students are interviewed and tested - that's how we select the most motivated candidates. The course fees cover our expenses, and the income is invested in the Academy's further development.



Admission process

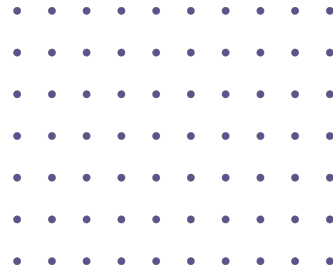
Pass an entry test on our LMS platform (takes roughly 30 minutes to complete)

lms.se.beetroot.academy

Online meeting
Meet our coordinator, ask any questions, and see if we're a good match.

Course fee
You can choose monthly installments or pay for the entire course at once

Get going!
Study in a friendly atmosphere and feel at home.





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