

Python

DEV ACCELERATOR COURSE PACKET

Last Updated: 2016 June 22

PYTHON

CURRICULUM

4 weeks
40-60 hours/week

Master the Python software stack in four weeks—a full stack focusing on the foundational structure of networked programming. As the software choice of Instagram, Reddit, and other notable sites, Python is an extremely desirable skillset within today's web development industry. This course covers intermediate to advanced topics in Python, MySQL, OOP, Flask, and much more.

Companies using Python:



PREREQUISITES*

- Personal laptop to work on during the program
- Fluent in another MVC/OOP stack
- At least 1 year of industry work experience (preferred)
- Basic Algorithm Knowledge
- Comfortable with HTML
- Familiarity with installation of applications on Mac/Windows/Linux

*Please note that this course is intended for experienced software developers.

SCHEDULE*

	TECHNOLOGIES	TOPICS COVERED	
Week 1	Python MySQL	Object-Oriented Programming SQL Series ERD Diagrams	
Week 2	Flask	Web Security Basics MVC Framework Design Patterns	
Week 3	AJAX API jQuery	CRUD Operations Application Deployment	
Week 4	**PROJECT WEEK** Assigned or Individual Project	**OPTIONAL TOPICS** PostgreSQL Django Object Relational Mapper Scaling Web Apps Web Crawler	

* Weekly content subject to change depending on student's pace.



PYTHON

MYSQL

Intro to MySQL
- Database Design & Relationships
- Entity Relationship Diagrams (ERD)
- Database Normalization
- Intro to MySQL Workbench & Querying
- Conventions & Common Data Types
- How to Use ERDs
- Using a Database with Your UI
- Recreating ERDs*

PYTHON

Intro to Python
- Creating Variables in Python
- Common Data Types & Best Practices
- Using Strings & Built-in String Functions
- List Creation & Manipulation
- Using Tuples & Built-in Tuple Functions
- How to Use Dictionaries in Python
- Conditionals, Operators, & Nested Loops
- Constructing Functions in Python

PYTHON OOP

Python Object Oriented Programming (OOP)
- Creating Objects & Classes
- Adding Properties/Attributes to Classes
- Constructing & Adding Methods to Classes
- Chaining Methods & Using Magic Methods
- How to Use Modules & Packages in Python
- Creating Multiple Objects
- Updating Methods with 'Super'

Intro to Python Advanced Topics
- How to Use Multiple Arguments
- Ternary Operators in Python
- Using Lambda
- Overriding Inheritance & Polymorphism
- Using Composition Over Inheritance

Python Test Driven Deployment (TDD)
- Unit Testing in Python & Outcomes
- How to Use Assertions
- Using TDD Methods: setUp & tearDown

FLASK

Intro to Flask
- Routing in Flask Applications
- Building & Using Forms
- Rendering Templates & Views
- Delivering Static Content
- The Different HTTP Methods
- Implementing Cookies & Sessions
- Hidden Inputs
- Form Validation

Intro to Flask with MySQL
- Import, Export, & Connect Your Database
- Connecting & Running Python Across Files
- Database Communication with Python
- Data Validation with Python
- Encryption & Data Security Basics
- Using BCrypt for Encryption

PYLOT MVC

Intro to Pylot Model View Controller (MVC)
- What is an MVC?
- How Controllers Work
- Rendering Views
- Session Classes & Using Session Data
- Routing in Pylot
- How to Use Models with Controllers
- Data Validation with Pylot
- Using Bcrypt with Pylot MVC
- How to Use Multiple Controllers & Models

DEPLOYMENT

Intro to Python Application Deployment
- Tools You'll Use:
  - Amazon Web Services (EC2)
  - Linux (Ubuntu)
  - Gunicorn & Nginx
  - PostgreSQL
  - Virtualenv
  - Git
  - Custom Domains

*Optional topics available

1. APPLICATION

Prospective students must first submit an admissions application. This is a brief application form where you'll share your background, submit your resume, and provide contact information. Based off your application, our admissions team will verify that you're qualified for the program, which is designed specifically for experienced developers. An admissions decision will be made within 3-5 business days.

2. TECHNICAL INTERVIEW

The second step is your technical interview. We'll ask you questions about your background and understanding of core programming concepts.

3. ACCEPTANCE LETTER

If selected to attend, you will receive an acceptance letter through email and a link to submit your safety deposit, which will reserve your seat in the Coding Dojo program. You will also receive instructions concerning the required preparation for your upcoming program.

4. SAFETY DEPOSIT

Due to limited seats and high demand, you must first submit your safety deposit to reserve your seat and access the pre-course materials.