



Certificate Program in Python for Computational Finance

Example Study Plan

Remarks:

- the table is just an **example** of how the different topics can be combined into a 12-week structured study program plus practice modules
- week 1 refers to the **starting week of the program**, i.e. to **calendar week 9 from Monday, 25. February 2019**
- it assumes an effort of about **10-15 hours per week** for live sessions, watching videos, reading documentation and self-study; some invest a bit more
- the column **Certificate Program** contains the main elements/videos of the program, found under the same name on the Quant Platform and maybe other trainings (such as Finance with Python Videos)
- the column **Python for Financial Data Science** refers to the materials for respective class
- the column **Tools & Skills** refers to topics related to basic tools and skills needed in software and Python development for finance and algorithmic trading; these topics are important for setting up a proper development environment and efficient development processes
- the column **Reading Material** refers to the written materials & codes found in the *Finance with Python* course and the *Derivatives Analytics with Python* book as well as in the draft version of *Python for Finance, 2nd ed.*
- under **Live Sessions** you find the planned live sessions for the respective week; they will be announced by email invitations (in general in the week before they take place); they cover **selected important topics** or present **new/updated material** not yet available on the Quant Platform
- the column **Optional Resources** lists videos, e.g. from the classes **Python for Databases**, that can be watched learn about additional topics of interest; they might also present topics from a different angle or with different twists
- on the Quant Platform you also find a training class called **Webinars, Talks & Special Topics** – here you find a collection of recordings from recent talks, webinars and workshops that are related to Python for Finance & Algorithmic Trading
- if you have **technical or content questions**, please use the **User Forum** on the Quant Platform
- if you have **organizational questions**, you can send us an email to training@tpq.io

WEEK	Certificate Program	Python for Financial Data Science	Tools & Skills	Reading Material	Live Sessions	Optional Resources
01	Finance with Python 1 Finance with Python 2	Data Types & Structures 01	Tools & Skills 01 (Python Installation, Python Environments)	Finance with Python Chs 1-3 Python for Finance Chs 1-2	Introduction & Overview on 25.02.2019 Q&A Session on 01.03.2019	PyExcel 01
02	Finance with Python 3 Finance with Python 4	Data Types & Structures 02	Tools & Skills 02 (Docker Usage, Jupyter)	Finance with Python Chs 4-6 Python for Finance Ch 3 Derivatives Analytics Ch 1	tba	PyExcel 02
03	Market Based Valuation DX Quick Start	Numerical Computing with NumPy	Tools & Skills 03 (Cloud Usage, Jupyter)	Python for Finance Ch 4 Derivatives Analytics Chs 2-3	tba	PyExcel 03
04	Complete Market Models DX Complete Market Models	Data Analysis with pandas	-	Python for Finance Ch 5 Derivatives Analytics Ch 5	tba	PyExcel 04
05	Risk Neutral Valuation DX European Valuation	Object Oriented Programming	Tools & Skills 04 (Vim Code Editor)	Python for Finance Ch 4 Derivatives Analytics Ch 4	tba	PYDB 01
06	Fourier Pricing Theory DX Derivatives Portfolios	Visualization & Financial Time Series	Tools & Skills 05 (Screen + Vim + q)	Python for Finance Chs 7-8 Derivatives Analytics Ch 6	tba	PYDB 02
07	Fourier Pricing Applications DX Fourier Pricing	Input-Output Operations	Tools & Skills 06 (Doctest & Unittest)	Derivatives Analytics Ch 6 Python for Finance Ch 9	tba	PYDB 03
08	American Options DX American Valuation	Performance Python	Tools & Skills 07 (Git Version Control)	Python for Finance Ch 10 Derivatives Analytics Ch 7	tba	PYDB 04
09	General Market Model DX Stochastic Short Rates	Math Tools & Stochastics	Tools & Skills 08 (Python Packaging)	Python for Finance Chs 11-12 Derivatives Analytics Ch 9	tba	PYDB 05
10	Monte Carlo Simulation DX Special Topics	Statistics Dates & Times	Tools & Skills 09 (Documentation)	Python for Finance Ch 13 & App Derivatives Analytics Ch 10	tba	PYDB 06
11	Calibration DX Implied Vol & Calibration	Machine Learning Basics	Tools & Skills 10 (Code Hosting/Case)	Python for Finance Ch 13 Derivatives Analytics Ch 11	tba	NLP 01
12	Hedging DX Review	-	-	Derivatives Analytics Ch 12 & 13	tba	NLP 02

WEEK	Certificate Program	Python for Financial Data Science	Tools & Skills	Reading Material	Live Sessions	Optional Resources
13	Python Derivatives Analytics Practice Module					
14	DX Analytics Practice Module					
15-16	Final Project Preparation					