



Certificate Programs in Python for Algorithmic Trading & Computational Finance

Example Study Plan (September 2019 Cohort)

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 programs**, i.e. to **calendar week 36 from Monday, 29. September 2019**
- it assumes an effort of about **10-18 hours per week** for live sessions, watching videos, reading documentation and self-study; some invest a bit more, some less per week and shorten or stretch the program duration that way
- the column **Algorithmic Trading** contains the main elements/videos of the Python for Algorithmic Trading class
- the column **Computational Finance** contains the main elements/videos of the Computational Finance class, including DX Analytics
- the column **Python for Financial Data Science** refers to the materials for respective class
- in these three columns, **bold text** represents **videos** and **regular text** refers to the **written materials & codes** as found in the *Finance with Python*, *Python for Algorithmic Trading* and *Python for Finance Courses* as well as in the book *Derivatives Analytics with Python*
- 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 **AI in Finance** refers to the materials for the class that covers machine & deep learning for Finance and Algorithmic Trading in detail; although the topics are mainly targeted towards market prediction, the basic approaches are also of interest in Computational Finance
- the column **Optional** lists videos, e.g. from the classes **Python for Excel**, **Python for Databases** or **Natural Language Processing**, that can be watched to go deeper into certain topics that are not at the very core of the program but that might be important in practice
- 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

W	Algorithmic Trading	Computational Finance	Live Sessions	Financial Data Science	Tools & Skills	AI in Finance	Optional
01	Finance with Python 01 & 02 Finance with Python Chs 1-3		Intro & Overview 02.September	Data Types & Structures 01 Python for Finance Chs 1-2	Tools & Skills 01 (Python Environments)	AI in Finance 01	PyExcel 01
02	Finance with Python 03 & 04 Finance with Python Chs 4-6		Tutorial 01 12. September	Data Types & Structures 02 Python for Finance Ch 3	Tools & Skills 02 (Docker Usage, Jupyter)	AI in Finance 02	PyExcel 02
03	Financial Data Science		tba	Num. Computing with NumPy Python for Finance Ch 4	Tools & Skills 03 (Cloud Usage, Jupyter)	AI in Finance 03	PyExcel 03 OOP 01
04	Vectorized Backtesting PyAlgo Chs 1-4	Market Based Valuation DX Quick Start DAWP Chs 1-3	tba	Data Analysis with pandas Python for Finance Ch 5	-	AI in Finance 04	PyExcel 04 OOP 02
05	Prediction-based Trading PyAlgo Ch 5	Complete Market Models DX Frame and Simulation DAWP Ch 5	tba	Object Oriented Programming Python for Finance Ch 6	Tools & Skills 04 (Vim Code Editor)	AI in Finance 05	PYDB 01 OOP 03
06	Event-based Backtesting PyAlgo Ch 6	Risk-Neutral Valuation DX European Valuation DAWP Ch 4	tba	Visualization & Financial Time Series Python for Finance Chs 7-8	Tools & Skills 05 (Screen + Vim + q)	AI in Finance 06	PYDB 02
07	Real-Time Data Handling & Viz PyAlgo Ch 7	Fourier Pricing DX Fourier Pricing DAWP Ch 6	tba	Input-Output Operations Python for Finance Ch 9	Tools & Skills 06 (Doctest & unittest)	AI in Finance 07	PYDB 03
08	Oanda Trading Platform PyAlgo Ch 8	American Options DX American Valuation DAWP Chs 7-8	tba	Performance Python Python for Finance Ch 10	Tools & Skills 07 (Git Version Control)	AI in Finance 08	PYDB 04
09	FXCM Trading Platform PyAlgo Ch 9	General Market Model & MCS DX Multi-Risk Derivatives DAWP Ch 9	tba	Math Tools & Stochastics Python for Finance Chs 11-12	Tools & Skills 08 (Python Packaging)	AI in Finance 09	PYDB 05
10	Interactive Brokers PyAlgo Ch 10	Monte Carlo Simulation DAWP Ch 10	tba	Statistics Dates & Times Python for Finance Ch 13 & App	Tools & Skills 09 (Documentation)	AI in Finance 10	PYDB 06
11	Gemini Trading Platform PyAlgo Ch 11	Calibration DX Implied Vol & Calibration DAWP Ch 11	tba	Machine Learning Basics Python for Finance Ch 13	Tools & Skills 10 (Code Hosting/Case)	AI in Finance 11	NLP 01
12	Review & Automation PyAlgo Ch 12	Valuation & Hedging DX Complex Portfolios DAWP Chs 12-13	tba	-	-	AI in Finance 12	NLP 02