

Six FinTech courses (8/29/2024, Paul Yan, [pauilyxy@gmail.com](mailto:pauilyxy@gmail.com), and [paul.yan@hofstra.edu](mailto:paul.yan@hofstra.edu))

Course #1: Introduction to FinTech using Excel (in an R-assisted Learning Environment) will teach students fundamental concepts, such as Block and Blockchain, the concepts of centralized, decentralized, and distributed systems, and basic encryption. After launching R, issue the following one-line R code for week 1's lecture.

```
source('http://datayyy.com/introFintech/week1.txt')
```

Click [here](#) for Chapter 1, [here](#) for Chapter 2, and [here](#) for Chapter 5.

Course #2: Introduction to Python will teach students fundamental concepts, such as assignments, while and for loops, logic conditions, and Python modules. My book “[Learning R and Python for Business School Students](#)” (2023) could be used. After launching R, issue the following one-line R code for week 1's lecture.

```
source('http://datayyy.com/py/week1.txt')
```

Click [here](#) for the book, [here](#) for the preface, [here](#) for the code, and [here](#) for the syllabus.

Course #3: Python for Finance will help students apply Python to Finance, such as downloading and processing stock data using the yfinance module, running CAPM, and optimizing portfolios by maximizing the Sharpe Ratio. My book “[Python for Finance](#)” (2017, 2<sup>nd</sup> ed.) could be used. For week 1's lecture, issue the code below.

```
source('http://datayyy.com/p4f/week1.txt')
```

Click [here](#) for the book link, [here](#) for the code, and [here](#) for the slides (15 weeks).

Course #4: Technical Analysis, Text Analysis, and Machine Learning in Finance using Python will review Python basic concepts first, then teach students Financial Analytics: Technical Analysis and Text Analysis; after that, students will learn Unsupervised/Supervised/Reinforcement Learnings, and Neural Networks. Three chapters are for projects: Chapter 13: GitHub, Git Bash, and API; Chapter 14: ChatGPT to write/extend/debug code; and Chapter 15: A list of good term projects.

```
source('http://datayyy.com/ml/week1.txt')
```

Click [here](#) for the preface and [here](#) for the Table of Contents.

Course #5: Robo-advising using Python will introduce Machine Learning and apply them to Robo-advising. In addition to Markowitz portfolio optimization, the Black-Litterman Model (1991) and Parametric Portfolio Policies by Brandt, Santa-Clara, and Valkanov (2009) will be introduced and programmed.

```
source('http://datayyy.com/robo/week1.txt')
```

Click [here](#) for the link to the paper *Robo Advising Using Python: A New Finance Course* and [here](#) for the paper *Wealth inequality and the next-generation financial planners*.

Course #6: Introduction to Blockchain and Cryptocurrency via Python will introduce Blockchain, Smart contracts, DeFi related concepts and programs. In addition to Python, the Solidity language will be used to write smart contracts.

```
source('http://datayyy.com/blockchain/week1.txt')
```

Click [here](#) for the code, [here](#) for “Python Ganache interaction”, [here](#) for the preface, and [here](#) for *Chapter 7: Blockchain: Checking Digit, CUSIP, and Hash*.

Extra course: Financial Modeling using R will apply R to finance, including how to run CAPM and the Fama-French 3-factor model, calculate VaR, and optimize portfolios.

```
source('http://datayyy.com/fmr/week1.txt')
```

My book *Financial Modeling using R* (2018) could be used. Click [here](#) for the cover page, [here](#) for the syllabus, [here](#) for the Table of Contents, [here](#) for the R code, and [here](#) for Lecture #1.

Click [here](#) for my FinTech website and [here](#) for the paper "Can Teaching Schools Compete With Research Schools? A FinTech Case."