

DATA APPLICATION LAB PYTHON AND QUANTITATIVE ANALYSIS



Updated Feb 1, 2016

Syllabus

Time: Sat & Sun 6-8 pm

Class 1 – 4 (Python from scratch + Mini Projects)	2/11/2017
Topic 1: Introducing Python	
• Python background	
• Basic Data types	
• Syntax and rules	
Topic 2: Intermediate Python	2/12
• Complex Data Types	
• Functions	
• Object Oriented Programming	
• API	
• [Project]: Weather History	
Topic 3: Advanced Python	2/18
• Data Structure	
• Algorithm (LeetCode Based)	
Topic 4: Python as a Pro	2/19
• Packages	
• [Project] Web Scraping and Sentimental Analysis	
Class 5 – 8 Python in Quantitative Analysis (Python in Practice)	2/25
Topic 1: Monte Carlo simulation	
• Stochastic process	
• Variance reduction	
• Option pricing – American/ European	
• Risk Measurement	
Topic 2: Principle Component Analysis & Bayesian Method	2/26
• Replicated index	
• Bayesian Regression	
Topic 3: Foreign Exchange Market Making	3/4
Topic 4: Quantitative Finance Interview	3/5
Class 9-10 Python Web Project	3/11
• Web development using Python (Flask framework)	
Capstone Project	3/12
• Project: Financial Index Replication using Principle Component Analysis	
• Python Visualization	