NYU Tandon School of Engineering

Dept. Financial Risk and Engineering

FRE7251 Algorithmic Trading and High Frequency Finance

Fall 2018

Professor: Alec Schmidt

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Wednesdays: 11:00 am – 1:41 pm

Credits: 1.5

Description:

The course offers an overview of modern financial markets for various securities (equities, FX, and fixed income). Different types of traders, orders, and market structures are described. The basic market microstructure models are presented. The concepts of optimal order execution are outlined. The course introduces several technical and arbitrage trading strategies, and methods of their back-testing. Specifics of high-frequency trading are discussed.

Prerequisite:
FRE6083 Quantitative Methods in Finance

Grading
Class attendance and active participation is highly encouraged
Homework (four home assignments, 12% each) 48%
Project (will be presented in class) 52%

Required textbook: 1. A.B. Schmidt, "Financial Markets and Trading: Introduction to Market Microstructure and Trading Strategies" (Wiley, 2011, ISBN: 0470924128).
Multiple references to recent research will be provided during the course.

Syllabus

Week	Topics	Readings from [1]	Home assignments
1	Financial markets: agents and structures	Ch. 1 - 2	#1; will be provided in NYU Classes
2	Asset price dynamics and volatility	Ch. 7 - 8	#2; will be provided in NYU Classes

3	Technical trading strategies and back-testing	Ch. 10 &12	#3; will be provided in NYU Classes
4	Arbitrage trading strategies	Ch. 11	Project; will be provided in NYU Classes
5	Market microstructure models	Ch. 3 - 6	#4; will be provided in NYU Classes
6	Execution strategies	Ch. 13	
7	High-frequency trading; | Project presentation	References will be provided	

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