CENG 785
Algorithmic Trading & Quantitative Strategies

Introduction
Asst. Prof. Selim Temizer
Course Resources

• Instructor
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• COW Website
  • https://cow.ceng.metu.edu.tr/Courses/?course=ceng785&semester=20171
  • Syllabus
  • Links to previous years’ contents

• Newsgroup
  • metu.ceng.course.785
Reference Books

• R. “Tee” Williams, MBA
  (Tee Williams Associates, Principal)

• Rishi Narang, BS
  (T2AM LLC, Founding Principal)

• Barry Johnson, MS
  (Barclays Capital, VP)
Reference Books

• Dr. Irene Aldridge
  (AbleMarkets, President)

• Dr. Robert Kissell
  (Kissell Research Group, President)
  • [Link](https://www.mathworks.com/videos/kissell-research-group-develops-high-frequency-trading-cost-index-96688.html)

• Dr. Ernest P. Chan
  (QTS Capital Management LLC, Hedge Fund Manager)
Online Contests

• TradeMaster
  • http://www.trademaster.com.tr/

• SanalBorsam
  • http://www.sanalborsam.org/

• ...

• Possible Bonuses
  • AA for winner
  • +2 letter grades for first 3 positions
  • +1 letter grade for first 5 positions
Brief Course Content

• Background on Financial Markets
  • History
  • Players
  • Instruments
  • Markets
  • Tools
  • Functions
  • Trading Process
  • Terminology

• FIX Protocol

• Orders and Order Book Dynamics

• Algorithmic Trading
  • Benchmarks
  • Algorithms

• Cost Analysis
  • Optimal Strategies

• Quantitative Strategies
  • Data Mining and Artificial Intelligence
  • Time Series Analysis
  • News Handling

• High-Frequency Trading
  • Statistical Arbitrage
  • Directional Strategies
  • Market Making

• Portfolio Management

• Performance Analysis

• Software Tools
  • FIX API, Weka, MetaTrader, ...
Today: Introduction (Informal)

• Story of Company Shares
  • Limited Liability Companies (LLC)
  • Corporations (Corp)
  • Primary Market
  • Secondary Market
  • Trading in Secondary Market (Limit-Order Book Demo)

• AlgoTrading Framework
  • Black Box
  • Definition of Algorithmic Trading
  • Definition of Quantitative Trading
Story of Company Shares

- Temizer LLC (Ltd. Şti.)
- Project idea
- Need to raise capital
- Use investment banking services
- Create shares (equity)
- IPO: Sell on primary market
- Temizer Inc/Corp (A.Ş.)
- Further trading on secondary market (e.g. BİST)
- (Ticker) Symbol: TMZR
Secondary Market Trading Demo

• (On NetBeans)
AlgoTrading Framework

- Inside of the Black Box!
  - From Rishi Narang
- Algorithmic Trading
  - Execution Module
- Quantitative Trading
  - All Other Modules
Summary

• Syllabus
• Course Information
• Course Resources
• Reference Books
• Brief Content
• Story of Company Shares
• AlgoTrading Framework

See you next lecture!

Please don’t be late to classes!