Syllabus

Lecture 1:

Introduction to Stock Markets

Corporate actions: splits, dividends. Mechanic of short selling. Basic concepts P/E, P/B.

Overview of market microstructure: Order Book, limit orders, market orders, LOC, MOC, hidden orders, exotic order types.

How to calculate PnL. Realized/Unrealized PnL, marking to close.

Overview of US exchanges and liquidity rebates. Simple market making strategies.

Lecture 2:

Benchmarks of success. Indexes. Introduction to ETF's. Creation/redemption. ETF market making. Index rebalancing trades. Simple arbitrage strategies.

Introduction to Statistical Arbitrage. Key ingredients of statistical arbitrage models: Risk Models, Alpha Models (Signals), Market Impact Model.

Lecture 3:

Practical introduction to CAPM. Decomposing stock returns into systematic and firm specific part. Alpha versus beta. Introduction to portfolio construction and optimization.

Lecture 4:

Methodology of historical simulations. Selecting a trading universe. Market Impact Models in detail. Most common errors: Survivorship bias, lookahead bias, overfitting.

Lecture 5:

Classification of signals used for forecasting. Liquidity providing versus momentum trading.

Detailed analysis of simple strategies. Pairs trading and basic mean reversion strategies.

Lecture 6:

Multi-period optimization and dynamic programming. Combining multiple signals together. Examples of realistic trading strategies.

Lecture 7:

Real life risk management, drawdowns, risk constraints. Extreme events in the markets.

Finding an edge.

Discussion of the proposed projects.

Extra-material

- Manipulative HFT strategies
- GME insanity, options trading by millennials / short squeeze etc.
- Topics of your choice ?