

Quant course content

1) Probability and Statistics

- Class 12th basic probability concepts and questions.
- Central tendencies and descriptive stats(mean, median, mode, deviation) and Buffen Needle Q, Monte Hall problem & circle problem.
- Expectation and joint probability concepts (multiple answers with different approaches Q).
- CLT, WLN, SLN
- **Probability Distributions**
 1. Binomial, poisson, bernoulli, uniform (Discrete).
 2. Normal, uniform , exponential.
 3. Questions on their expectations and related concepts.
- Correlation and Covariance.
- Regression Analysis and estimations and their application in Quants.

2) Statistical Inference

- Golden bars of estimators (unbiased, consistency, efficiency, MVUE).
- Hypothesis testing and errors(type-1 and type-2).
- Rao blackwell theorem.
- Z- test, t-test, f-test, chi square test and their calculations
- p- value and its relation with hypothesis and other statistics.

3) Intro to stock markets

- Importance of investing (value and growth investing)
- What are stocks and stock markets
- SEBI, exchanges(indices), retail, institutional investors.
<https://www.icicidirect.com/ilearn/stocks/courses/chapter-3-stock-market-participants-and-regulator>
- Candlesticks
<https://www.cashoverflow.in/how-to-read-candlestick-charts/>
- Volume
<https://www.5paisa.com/stock-market-guide/stock-share-market/what-is-volume-in-stock-market#Stock5>
- Why prices change

<https://www.investopedia.com/terms/b/bid-askspread.asp>

- Fundamental and technical analysis(RSI, MA, Bollinger Bands, supertrend;;resistance support, trendlines, channel, ascending descending triangle and other patterns)
- <https://www.icicidirect.com/ilearn/stocks/courses/chapter-14-behavioural-biases-and-common-pitfalls-in-investment-part-1>