



International Institute of Investment Research & Trading Analytics

Suite # 301, H-14, AaronVile, Sector 48, Gurugram -122018 India

www.IIIRTA.com | iirta.global@gmail.com | +91.93111.11230

Applied Quant, Algos, Analytics & Derivatives for Trading & Investments

Data & Analytics maximize your wealth, ignorance & emotions spoil your wealth

Training By:

Dr. Anup Raj: PhD in Financial Derivatives, 17 Year Experience in Financial Market. [Derivatives Trading & Research, Portfolio Management, Arbitrage Trading Models, Directional Derivatives Trading - Technical, Quantitative & Algo Trading Strategies, Building Analytics Algorithms & Automated Trading, Automated Market Analytics, Research & Execution of Quant Models, Technical Models & Fundamental Models. Investment Experience across Markets & Assets], Ex-Professor of Finance, IILM. Visiting Professor @ Amity, FIIB, IBS, ICFP, Galgotias University, DIAS etc.

Mentoring & Advisory By:

Mr. Neeraj Khurana, Cofounder & Chief Mentor, IIIRTA

Duration: 60 hours (over 30 days)+8 hours Hands on Quant Model Building

Day : 1&2

- 1.Introduction to the concept of Financial Engineering & Econometrics
- 2.Applied role of Mathematics, Statistics & Technology in the world of Trading & Investment
- 3.Role & impact of human biases on decision making vis-à-vis Quant Finance
- 4.Introduction of Algo & Automated Trading & investment on different time frame.
 - (a)LFT (b)MFT(c)HFT(d)Swing &Momentum (e)Positional

Day: 3 &4

- 5.Applied role of algebra, geometry, probability & calculus in Trading & Investment
- 6.Understanding the relationship of one price point with other using simple mathematics
- 7.Understanding the basic concepts of modeling
- 8.Applied role of Quant Models, its advantages & disadvantages.

Day:5 & 6

- 9.Understanding the role of Data Science in Investment & Trading



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10. Role of Statistical tools like Excel, Python & R

11. Understanding the nature of data & their application

(a) Structured Data (b) Unstructured Data (c) Discrete Data (d) Continuous Data (e) Alternative Data

12. Time Series Data & its application in Trading & Investment

Day: 7 & 8

13. Introduction to the commonly used quant model

(a) Black Box Model or Alpha Model (b) Risk Model (c) Transaction Cost Model (d) Portfolio Construction Model (e) Execution Model

(b) Understanding of Market Micro Structure & Order flow & Order Matching mechanism

(c) Execution management in terms of Bracket Order, Cover Order, Basket Order & AMO Order

14. Understanding of Trading & Investment Success Equation

$$T \& I \text{ Success} = f(RM, PM, MM, EM, PMM)$$

15. Understanding the role & application of Mean, Median, Mode, Variance & Standard Deviation Z Score & Confidence Interval

16. Making of a Quant Model using OHLC data in Excel & its applicability

Day: 9 & 10

17. Volatility Modeling in different dimension for trading using basics mathematics

(a) Magnitude (b) Direction (c) Acceleration (d) Speed (e) Time Phase & Lag-Lead

18. Excel based Modeling for position & risk management for live trading

19. CPR model for position management

20. Understanding the Concept of Value at Risk & Black Swan

Day: 11 & 12

21. Excel based quant model for Options Trading & its use



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22. Conversion of Technical Analysis to Mathematical Analysis

23. Development of Leading Mathematical indicator for price prediction

24. Advance Mean Reversion & Momentum Model without using any chart

25. Understanding the market GANN way, Sign Wave, Tide & Wave Analysis

Day:13 & 14

26. How to overcome the trap of Break-Out, Momentum & Other Technical Indicators using math

27. Applied Time Analysis using Geometrical Angles & Analytics, Sign Wave & GANN

28. Learn to pre-plan your trade ahead of market movement being market neutral using Stochastic Tool

29. Understand the concept of slope, trend & Noise. How to filter noise in different time frame.

Doubt Clearing Session & Project Assignment for Live Trading

DAY 15 & 16 :

- (1) Applied Financial Derivative Tools in Financial Market & its application
- (2) Understanding of Risk/Reward Dynamics of Derivatives & the language of Futures & Options
- (3) Understanding Pay Off Structure in terms of Profit/Loss
- (4) The myth about unlimited profit & loss in Futures & Options

DAY 17 & 18 :

- (5) Understanding of Volatility and its mathematics & introduction to Derivatives Pricing Model
- (6) Applied methods to price Derivatives with focus on Futures & Options only
- (7) Concept of Cost of Carry, Backwardation, Contango, Implied yield & Futures Chain
- (8) Decision making tool about Option Buying & Option Selling

DAY 19 & 20 :

- (9) Concept of Risk-Free profit through Arbitrage using Futures and Futures Chain
- (10) Factors impacting Options' Price (Before expiration & on the expiration)
- (11) Option sensitivities in terms of Greeks (Delta, Gamma, Vega, Theta & Rho)



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(12) Application of Speed Vs. Time in Volatility for option pricing

(13) Option Elasticity & its application to maximize return

DAY 21&22 :

(14) Introduction & Application to the higher order of Greeks(Delta Bleed,Charm,Dvega&Dgama)

(15) Applied tools of Risk Management using Futures & Options

(16) Option Portfolio Risk Management Strategies, Delta Neutral Vs. Gama Neutral

(17) Introduction to Directional, Semi Directional, Synthetics, Market Neutral Options Strategies

(18) Special & Focused Strategies for **Expiry** in Options at minimum risk

DAY 23 &24 :

(19) How to Apply Technical Indicators like SMA, EMA, Bollinger Band, CPR & other statistical indicators to play Options Strategies

(20) Application of options for direction prediction

(21) Application & tools of Position Management in integration with Risk Management

(22) Money Management in terms of Costing of trading & Margin requirement

DAY 25 &26:

(23) Illusion of Open Interest in Option Trading

(24) Critical Role of Volatility in options trading & Volatility based strategies

(25) Understanding the Physical Settlement Mechanism of Futures & Options

(26) Dissection of Transaction Cost and its impact on profitability

(27) Doubt Clearing Session

LONG TERM BENEFITS:

YEAR 1: 1 Year of Support: Doubt clearing session and discussion on online support.

LIFETIME: Lifetime Access to Social Media trading Community to discuss Trading Ideas & topics learnt.