Options Pricing Course: Greeks, Volatility, Strategies and Option Book Limits

7 – 11 June 2027
Tokyo

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Programme Summary

Options pricing, from the value of a single contract to the Greeks, volatility and limits of a whole book, is the subject of this one-week training course for dealing, treasury and risk leaders, ending in a valuation and limit pack for one option book. Option losses often arise because sensitivities are misread or limits do not match the book. The programme moves from option value to sensitivities, volatility, strategies and control, using prepared market data. Mars Training Centre UK delivers this programme on options pricing to mixed-organisation cohorts.

The Business Case

Banks, corporate treasuries, asset managers and energy producers use options to hedge, to earn premium and to take views. Leaders who can test how a price was built, read what moves it and fix limits to the real exposure are better placed to approve option activity without relying on a single desk model.

- Valuation Disputes: Fall when the model, inputs and volatility choice behind each price are written down and checked.
- Unexpected Option Losses: Decrease when sensitivity limits are set to the book and reviewed on a fixed cycle.
- Hedge Cost: Becomes clearer when strategies are compared on premium, payoff and residual risk.

Principles and Evidence Base

- Black-Scholes-Merton Model: A closed-form model for European option value, applied in Session 1 to build and test a price.
- Binomial Tree Model: A step-by-step valuation method that also handles early exercise, applied in Session 1 to cross-check results.
- Put-Call Parity: A pricing relationship between calls, puts, the underlying asset and funding, applied in Session 2 to test quotes for consistency.
- Option Greeks: The sensitivities delta, gamma, vega, theta and rho, applied in Sessions 2 and 4 to read and limit risk.

Intended Participants

- Dealing-room heads who approve option strategies and review desk positions.
- Treasury managers who buy or sell options to hedge currency, rate or commodity exposure.
- Risk managers who set and monitor sensitivity and loss limits on option books.
- Product control and valuation managers who challenge model prices and volatility inputs.
- Investment and portfolio leaders who use options for protection or income.

Typical settings include bank derivatives desks, corporate treasuries, asset managers and commodity producers.

Learning Outcomes

1. Participants will be able to calculate option values with the Black-Scholes-Merton and binomial tree models.
2. Participants will be able to diagnose the effect of price, time, rate and volatility moves from the option Greeks.
3. Participants will be able to evaluate implied volatility against historical volatility and the shape of the volatility surface.
4. Participants will be able to compare option strategies by premium, payoff and residual risk.
5. Participants will be able to construct a hedge for the delta, gamma and vega of a small option book.
6. Participants will be able to justify option book limits and a valuation review routine to a risk committee.

Programme Structure

Day 1: Options Pricing Foundations

How is the value of one option built?

- Payoff Diagram Set
- Intrinsic and Time Value Split
- Black-Scholes-Merton Input Sheet
- Binomial Tree Worked Case
- Model Cross-Check Table

Day 2: Sensitivities and Consistency Tests

How does the value move when the market moves?

- Delta and Gamma Profile
- Vega and Theta Profile
- Rho and Funding Effect Sheet
- Put-Call Parity Test
- Scenario Revaluation Grid

Day 3: Volatility and Strategy Choice

Which strategy fits a stated market view?

- Historical and Implied Volatility Comparison
- Volatility Skew and Surface Reading
- Spread and Straddle Case
- Collar and Protection Case
- Strategy Selection Matrix

Day 4: Book Risk and Limit Setting

How is an option book hedged and limited?

- Delta Hedge Rebalancing Rule
- Gamma and Vega Limit Grid
- Premium and Loss Trigger Table
- Model Price Challenge Checklist
- Limit Breach Escalation Route

Day 5: Valuation and Limit Pack for One Option Book

Do the findings join into a pack a risk committee can approve?

- Applying the Session 1 Model Cross-Check Table
- Revaluing the Book with the Session 2 Scenario Grid
- Choosing Strategies from the Session 3 Matrix
- Fixing Limits from the Session 4 Grid
- Completing the Valuation and Limit Pack

Methodology

The programme is a data workshop built on prepared market data and a small option book that mixes currency and equity contracts. Participants value contracts, read sensitivities, compare strategies and set limits, then defend their pack to peers acting as a risk committee.

- Suggested activity: Pricing one call with two models and explaining the gap.
- Suggested activity: Rebuilding a book's delta, gamma and vega after a volatility shift.
- Suggested activity: Choosing between a spread and a collar for a stated view.

Capstone Output

Each participant completes a valuation and limit pack for one option book. It holds a model cross-check, a sensitivity profile, a scenario revaluation, a strategy matrix and a limit grid. At work it goes to the risk committee and becomes the baseline for later valuation reviews.

Frequently Asked Questions

Is options pricing suitable for managers who have not priced options before?

Yes. Options pricing is taught from payoffs upward, with prepared data and templates. You need responsibility for dealing, treasury, risk or valuation connected with options, but no earlier modelling experience.

Which models does options pricing rest on in this programme?

Options pricing here rests on the Black-Scholes-Merton model, the binomial tree model, put-call parity and the option Greeks, compared on prepared contracts and a small book.

How is the pack from options pricing used at work?

You present the valuation and limit pack to your risk committee, use its limit grid to monitor the option book, and keep its model cross-check as the baseline for later valuation reviews.

How does options pricing differ from a programme on bond portfolio management?

Options pricing concentrates on contingent payoffs, volatility and sensitivities, while a programme on bond portfolio management concentrates on yield curves, duration and credit selection.