

OPTION PRICING AND RISK MANAGEMENT, SYDNEY
2-DAYS 9:00 - 17:00 + OPTIONAL ASSESSMENT 17:00 - 17:30
UP TO 14 CE HOURS



a high powered course for finance professionals

Improve your mastery of the complex field of risk management.

Target groups:

- traders
- risk managers
- analysts
- portfolio and investment managers
- fund managers
- structured finance staff.
- financial planners
- accountants

Overview

The purpose of this two-day course is to enhance participant's knowledge about the features, behaviour and management of a range of options. The course is designed for finance professionals whose work brings them into contact with exchange traded and OTC options in equity, foreign exchange and commodities markets.

The course has a unique structure that combines lecture, discussion and interactive sessions. Class numbers are small, typically 10 to 12 attendees, allowing significant one-on-one time between presenters and participants. Practical Excel-based examples illustrate applications of the course content and form a large component of the total course time.

Presenters

Presenters are senior Macquarie staff who have practical, ongoing and high-level finance experience.



JOYDEEP MITRA

Senior Manager
BE (Software, 1st Class Honours and University Medal)
BCom (Finance and Mathematics)
University of Sydney

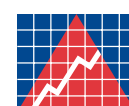
Joydeep has worked for Macquarie for 4 years. During this time he has been involved in the development and testing of a wide range of derivative pricing models including convertible bonds. He provides quantitative support to various divisions of Macquarie Group and is regularly consulted on the valuation and risk management of complex derivative structures.



RAOUL DAVIE

Division Director
BSc and MSc (Mathematics and Physics) Auckland University (NZ)
DPhil University of Oxford (UK)

Over the last 17 years, Raoul has worked on a variety of analytical problems in the financial markets, including portfolio optimisation and the development and testing of pricing models for exotic equity derivatives. Raoul also acts as an adviser to the Australian Stock Exchange Board, through his participation on the Derivative Adjustments Advisory Panel.



Endorsed by: **AFMA**

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The course

Participant outcomes

By the end of the workshop participants should be able to:

1. Explain the model of asset price dynamics that underlies option pricing.
2. Generate representative asset price movements in Excel.
3. Define the meaning of the option sensitivities: delta, theta, gamma, rho and vega.
4. For vanilla options, explain how the option sensitivities depend on option contract details and market rates.
5. Use a portfolio analyser spreadsheet to enter options and show the sensitivity of option parameters to contract details and market rates.
6. Explain how option parameters are related by a balance equation.
7. Show how the expected distribution of hedging payoffs depends on hedging strategies. In addition, use a Monte Carlo hedging simulator to verify that distributions are as predicted.
8. Describe the payoff characteristics of vanilla, digital, barrier, average rate, compound, forward start and multi-asset options.
9. Explain the situations in which buyers of the above options would receive favourable payoff outcomes.
10. Describe situations in which hedging the above options may be difficult.
11. Show how market shocks can cause irrecoverable losses in dynamically hedged positions.
12. Show that static hedging can help alleviate the problem above.
13. Explain how hedging can be adjusted to account for transaction costs.
14. Illustrate the effect of market illiquidity on hedging.
15. Use a portfolio analyser to show how management barriers and windows can make hedging of barrier options easier.
16. List some worst case scenarios and explain how those scenarios lead to hedging losses.

Content

Session 1: Options in a Black Scholes World

Asset price dynamics

1. The log normal model of asset price movements.
2. Practical exercises in generating asset price paths. Effect of volatility and drift.
3. Probability distribution of prices as a function of time for the above.

Option and hedging overview

1. Option pricing: Monte Carlo, binomial, analytical.
2. Put-call parity.
3. Definition of Greeks: delta, gamma, vega, theta and rho.
4. Using a combination of Greeks for fast option pricing.
5. How the Greeks above vary with contract parameters and market rates.
6. Introduction to the option portfolio analyser.
7. Delta and gamma hedging.
8. The balance equation - how Greeks are interrelated.
9. Payoff distributions as functions of hedging strategies.

Session 2

Characteristics and behaviours of a range of options

Overview

Coverage of vanilla, digital, barrier, average rate, compound, forward start and multi-asset options from the following perspectives:

1. What are the payoff characteristics of the option?
2. What's in it for the option writer? What features of the option would appeal to option holders? Under what scenarios would the holder be pleased with the behaviour of the option?
3. How does the option premium, delta, gamma, theta, vega and rho depend on contract details, market rates and time?

4. Which combination of parameters makes the option difficult to manage? For example, when do we get large spikes in Greeks?
5. Which combinations of parameters or changes in parameters lead to other interesting behaviours? For example, Greeks changing sign where those Greeks wouldn't change in sign in a vanilla option.
6. What is the balance equation that describes how the Greeks interrelate? For each of the exotic types, how does the balance equation compare with the vanilla option's balance equation?

Session 3: Hedging options

1. Static vs dynamic hedging.
2. Decomposing exotic options into portfolios of vanilla options.
3. Real world issues which aren't addressed by Black Scholes, including:
 - i) market shocks
 - ii) market illiquidity
 - iii) transaction costs.

Session 4: Managing options

1. Management
We can improve the manageability of our portfolio by using barriers and expires that differ from the contract barriers and expires. By managing at shifted volatilities we can also alleviate transaction costs. Where can these techniques be applied? What is their downside?

Continuing education

This course is an approved Continuing Education (CE) activity. Attendance at this workshop will enable you to earn 13 CE hours. Optional assessments will follow each days' workshop. Successful completion of both assessments will earn one additional CE hour.

Venue

Thinkspace
Level 8
9 Hunter Street
Sydney

Contact

Online: www.afma.com.au

Enquiries and Registrations

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Cost

\$2,400.00 + \$240.00 (GST) = \$2,640.00 TOTAL

Registration includes course materials, lunch and refreshments.

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REGISTRATION FORM

Personal details

Dr Mr Mrs Ms Miss

Name _____ Surname _____

Company Name _____ Position _____

Address _____

City _____ State _____ Postcode _____

Country _____

Telephone _____ Mobile _____

Fax _____ Email _____

Workshop dates

Please refer to www.afma.com.au for latest workshop dates.

Preferred date: _____

Registration fees

	Fee	GST	Total
<input type="checkbox"/> Workshop fee	\$2400.00	\$240.00	\$2640.00

REGISTRATION FEE includes course notes, light lunch and refreshments.

This document becomes a Tax Invoice for GST purposes upon completion and payment.

Please photocopy and retain for your records.

Method of payment

Attach cheque made payable to AFMA or provide credit card details below:

Bankcard Visa American Express

Master Card Diners Club

Cardholders Name _____

Total Amount \$ _____

Card Number Expiry Date _____

Signature _____

Please indicate if you do not wish to receive further information regarding AFMA Education & Training Activities.

5 easy ways to register

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Mail	AFMA Education & Training GPO Box 3655 Sydney NSW 2001

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- Delegates who transfer or cancel from a program inside 10 working days from the program start date are liable for the full program fee. No refunds will be given in this instance.
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- AFMA is not liable for any costs incurred by the attendee if the program is cancelled or postponed.
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