

Faculty



ANDREW AZIZ

Dr. Andrew Aziz is Managing Director, Market Risk and Buy-Side Solutions at Algorithmics Inc., responsible for leading the business development and product direction associated with risk based decision support solutions to Buy-Side and Sell-Side financial institutions. His previous roles at Algorithmics included Vice President of Products and Executive Director of Financial Engineering. Since joining Algorithmics in 1994, he has led the design, positioning, implementation and consulting of numerous risk management solutions and client driven initiatives in over 50 client sites around the world. Dr. Aziz holds a number of degrees, including a Ph.D. in Finance from York University, an MBA in Finance from Queens University and a B.Sc (Honours) in Chemistry from McMaster University. In addition to publishing several refereed articles on financial engineering and risk management, Andy has spoken extensively at risk management and financial engineering conferences worldwide as well as lecturing and providing training to various business schools and financial institutions. Prior to joining Algorithmics, Andy taught at York University and Wilfrid Laurier University in their MBA and BBA programs, respectively.



MATT DAVISON

Matt Davison is Canada Research Chair in Quantitative Finance at the University of Western Ontario in the departments of Applied Mathematics and of Statistical & Actuarial Sciences. Davison also teaches part time at Western's Ivey school of business. Davison's main research interests are energy finance, in particular modelling the real options that arise in those market, and portfolio optimization. Davison has worked in the front office, as a quant on the equity arbitrage desk at Deutsche Bank Canada in the late 90s, and continues to consult for both the private and the public sectors through two companies, Dydex Research & Capital and Math Problem Solvers Ltd.



PABLO OLIVARES

Pablo Olivares is Associated Researcher at Risklab Toronto, University of Toronto and instructor at the Department of Mathematics, Statistics and Computer Sciences at University of Toronto at Mississauga. He completed his Ph.D. at Universite de Paris XI. His research activities are related to *Non-Gaussian Models in Finance*, with several published papers regarding *Stable Distributions and Jump-Diffusion Models*. He has organized and lectured courses in Finance Mathematics at graduate level.



THOMAS S. SALISBURY

Thomas S. Salisbury, Ph.D. is a professor in the department of mathematics and statistics at York University, past president of the Canadian Mathematical Society, and a former deputy director of the Fields Institute for Research in Mathematical Sciences in Toronto. He works in probability theory, specifically on Brownian motion and Markov processes, with applications to mathematical and actuarial finance. He teaches in the financial engineering program at York, and is director of analytics for the QWeMA Group Inc. He received his B.Sc. from McGill University in 1979 and his Ph.D. from UBC in 1983. He has held visiting positions at Purdue University, UCSD and the University of Edinburgh, and has been at York since 1985 where he served a term as department chair. He is a fellow of the Institute of Mathematical Statistics, and of the Fields Institute. He was one of the organizers of the Fields Institute thematic program in "Probability and its Applications," has directed the Fields seminar in quantitative finance, and serves on the Ontario minister of education's curriculum council. He is a former co-editor-in-chief of the *Canadian Mathematical Bulletin*, and a former associate editor of the journals *Canadian Journal of Statistics*, *Potential Analysis*, and *Probability Theory and Related Fields*. His research is supported by NSERC and MITACS.



DAVID SAUNDERS

David Saunders received his Ph.D. from the University of Toronto in 2001. He is a member of the Department of Statistics and Actuarial Sciences at the University of Waterloo. He held positions as CLR Stockbrokers Chair in Corporate Finance and Deputy Director of Risklab Cyprus at the Cyprus International Institute of Management. He is a member of the Department of Mathematics at the University of Pittsburgh, where he co-directed the department's Professional Sciences Master Degree in Mathematical Finance. Prof. Saunders' research focuses on application on probability and stochastic optimization to problems in credit risk and derivative securities. During Saunders' graduate studies, he was a member of the Quantitative Research Group at Algorithmic Inc. and of Risklab Toronto. He has served as consultant for many financial institutions on problems involving derivative pricing, interest rate risk, and credit risk management.



LUIS SECO

Luis Seco received his Ph.D. from Princeton University in 1989. He joined the faculty of the University of Toronto in 1992, after a position at the California Institute of Technology. He founded Risklab in 1996 as a joint initiative between the University and Algorithmics Inc. which focuses on risk management issues, and is sponsored by a number of corporations in the financial sector. He is currently a professor in the Department of Mathematics and the Rotman School of Management at the University of Toronto. He is also president and CEO of Sigma Analysis and Management, a portfolio management firm which serves the institutional alternative investment sector worldwide. He specializes in market and credit risk as well as investment management.



STOKELEY SMART

Stokeley Smart is currently pursuing the Fellow of the Society of Actuaries (F.S.A) designation specializing in Finance/Enterprise Risk Management. He is expected to receive his F.S.A on September 17, 2008. Mr. Smart holds a number of degrees and Professional designations, including an Honours Bachelor of Science (H.B.Sc) from the University of Toronto with majors in Actuarial Science and Statistics and a minor in Mathematics, a Bachelor of Laws (LL.B) from the University of London specializing in Company and Commercial law, he is an Associate of the Society of Actuaries (A.S.A), a Certified Enterprise Risk Analyst (C.E.R.A) and a Professional Risk Manager (P.R.M).



DESHENG DASH WU

Desheng Dash Wu is the affiliate professor at RiskLab of University of Toronto and the director of RiskChina Research Center of University of Toronto. He is also the adjunct/guest professor at a couple of Chinese universities. He is a member of PRMIA Academic Advisory Committee. He is the Editor in Chief of International Journal of Services Sciences and editorial board members of several journals. His research interests focus on Enterprise Risk Management and performance evaluation in financial industry. He has around twenty referred journal publications and two books.



THE PRMIA DIFFERENCE

- PRMIA has a fully developed international Code of Conduct to guide the ethics of risk professionals
- PRMIA uses statistically validated exam questions in its certification program to ensure fairness and accuracy in testing
- PRMIA enjoys the public endorsement of its certification program by leading international firms
- Candidates from over 80 countries are pursuing PRMIA's internationally recognized certification program
- PRMIA offers a compilation of work by over 35 leading authors designed specifically for training candidates pursuing its risk certification
- PRMIA uses standardized, controlled and monitored testing facilities to ensure an equal testing experience for all candidates



PRMTM Risk Management Course

TORONTO

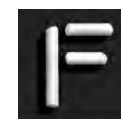
September 25 – December 11, 2008

Enroll in this course for:

- A structured study programme for professionals to undertake PRMTM examinations
- Timely completion of the certification program
- Maximum value added to study time for full-time professionals
- A flexible learning structure, tailored to your individual needs



ALGORITHMICS INC



THE FIELDS INSTITUTE



RISKLAB – UNIVERSITY OF TORONTO



We offer the PRM™ risk management training course as part of a global consortium of university partners that have recognised the leadership of the PRM™ Certification program and offer training courses for candidates. Included in this growing list of consortium members are the The National University of Singapore Centre for Financial Engineering, The University of Toronto Risklab, The University of Reading ICMA Centre, Technical University of Munich – HVB-Institute for Mathematical Finance, Hong Kong University of Science and Technology Masters of Science in Investment Management, the Macquarie University Applied Finance Center, a consortium of faculty in Paris representing ESCP-EAP, HEC and Ecole Polytechnique, Sorbonne and Université Paris Dauphine.

Course Content

The course is composed of 12 weekly three hour sessions. The content is related, though it is not exhaustive, to the PRM handbook. The course fee includes a hard copy of the PRM handbook, the PRMIA exam registration and slides of the lectures. Classes will be conducted at Fields Institute, 222 College Street, Toronto, Ontario, M5T 3J1, Canada. PRMIA and the Fields Institute reserve the right to alter the timing and speaking if necessary. Modules can be attended separately under request. Please contact prmia@risklab.ca.

HANDBOOK REFERENCE	TOPIC	DATE
PART I		
	Markets and Instruments	September 25
	Portfolio Management	October 2
	Fixed Income Instruments	October 9
PART II		
	A Review of the Mathematical Foundations of Risk	October 16
PART III		
I.B.3/I.B.5	Pricing Options and Futures	October 23
PART IV		
III.B.0	Risk Management, Capital Management and Regulations	October 30
III.A.1/III.A.2	Market Risk: Value-at-Risk (VaR)	November 6
III.A.3/III.A.4	Advances in VaR Models	November 13
III.B.1-III.B.4	Basic Credit Risk Models	November 20
III.B.5/III.B.6	Advanced Credit Risk Models	November 27
III.C	Operational Risk Management	December 4
PART IV		
	Case Studies	December 11

MODES OF INSTRUCTION Lectures will be given on Thursday evenings, from 5:00–8:00 p.m. Worked examples are to be developed during the lectures.

Curriculum Program

PART 1 (3 HOURS): A REVIEW OF THE MATHEMATICAL FOUNDATIONS OF RISK MANAGEMENT

- **Calculus:** Ordinary and Partial Derivatives, Taylor Series Expansions, Optimization, Ordinary and Partial Differential Equations
- **Linear Algebra:** Matrix Algebra and Determinants, Eigenvalues and Eigenvectors, Cholesky Factorization
- **Probability and Statistics:** Random Variables, Probability Distributions, Moments, Covariance and Correlation Matrices, Monte Carlo Simulation, Linear Regression, Basic Statistical Tests, Time Series, Stochastic Calculus, Ito Formula
- **Numerical Methods**

PART 2 (12 HOURS): FINANCE THEORY, MARKET AND INSTRUMENTS

- **Market and Instruments:** The Money Market, Fixed-Income Capital Market, Stock Markets, FX Market, Derivative Markets, Futures and Forward Contracts, Commodities, Swaps, Financial Basic Concepts: Risk and Return of Stocks and Portfolios, Risk Aversion, Arbitrage, Efficient Market Hypothesis Mathematical Model of Financial Markets
- **Portfolio Management:** Portfolio Optimization, Markowitz Mean-Variance Method, Efficient Frontier, Equilibrium in Capital Markets: CAPM, ATP Model, Market Beta's
- **Pricing:** The Principle of Pricing, Risk Neutral Probability, Binomial CRR Model, Pricing European Options, Call-Put Parity, Black-Scholes Model, Risk Neutral Probability in Continuous Trading, Pricing European and American Options, Greeks, Pricing Futures and Options on Currency, Pricing Exotic Options
- **Fixed Income Instruments:** Compounding Methods, Bonds, Interest Rate Models, Term Structure, Pricing Bonds

PART 3 (9 HOURS): RISK MANAGEMENT IN PRACTICE: MARKET RISK

- **Market Risk:** Identification, Assessment, Control, Market Risks in Funds, Banks and Non-Financial Firms, Market Sensitivities, Greeks
- **Value-at-Risk(VaR):** Value-at-Risk, Calculation of VaR in Linear Portfolios, Analytical, Historical and Monte Carlo Methods, Covariance Matrix Construction
- **Advances in Risk Measures:** Stress Testing, Volatility Cluster and VaR, Non-normality VaR, Decomposition of VaR, Principal Component Analysis, Scenario Analysis, Alternative Risk Measures, Extreme Value Theory

PART 4 (12 HOURS): CREDIT RISK, OPERATIONAL RISK & CASE STUDIES

- **Basic Credit Risk:** Foundations of Credit Risk Management, Credit Exposure, Default and Credit Migration, Credit Ratings, Credit Scores and Internal Rating Models, Implied Default Probabilities, Credit Spreads
- **Advanced Credit Risk Models:** Structural Merton Model, Intensity Models, Portfolio Models for Credit Loss, Credit Risk Capital Calculation
- **Operational Risk:** Operational Risk Management Framework, Operational Risk Process Model, Operational VaR
- **Case Studies:** Barrings, Metallgesellschaft, LTCM, Northwest Toys, Goodrich-Rabobank

Bibliography:

The Professional Risk Managers' Handbook
A Comprehensive Guide to Current Theory and Best Practices.
 Edited by Carol Alexander and Elizabeth Sheedy



PRMIA PRM RISK MANAGEMENT COURSE

September 25 – December 11, 2008

Fields Institute, 222 College Street
 Toronto, Ontario, M5T 3J1, Canada

12 weekly sessions 3 hours each,
 Thursdays from 5 to 8 p.m.

Lecturers: Dr. Andrew Aziz, Matt Davison, Dr. Pablo Olivares, Thomas S. Salisbury, Dr. David Saunders, Luis Seco, Stokeley Smart and Desheng Dash Wu.

Registration deadline: September 15, 2008
 (limited space is available so it is strongly recommended to register early)

COURSE FEE:
 Can \$2,800 (USD \$2,800)

Early registration before August 22
 Can \$2,400 (USD \$2,400)

Fee includes course slides, certificate issue by PRMIA, coffee breaks.

For registration of separated modules please contact prmia@risklab.ca

ONLINE REGISTRATION AND PAYMENT:
http://www.prmia.org/events/view_events.php?eventID=3105

Or mail a check to:
 Attention of Carmen Bryson
 Office of the Vice-principal for Research
 University of Toronto
 Mississauga 3359 Mississauga Road North Mississauga,
 ON L5L 1C6 Canada

STUDENT ENROLLMENT

Students registered in any finance, mathematics or economic program at university level may qualify for a fee reduction. Interested persons should send a resume to prmia@risklab.ca not later than September 15.

CONTACT

Stokeley Smart/Desheng Dash Wu (prmia@risklab.ca)

FOR MORE INFORMATION

<http://www.risklab.ca/rmcourse/home.htm>



“Professional development and certification within our industry is an imperative. Endorsing the PRM™ Certification ensures we continue to set industry leading standards for our staff, which directly benefit our clients.”

~ Dr. Ron Dembo,
 Founder, Algorithmics