APPENDIX A
Actuarial/Risk Management Certifications

The Society of Actuaries ("SOA") is the professional association for life actuaries in the U.S. The SOA grants three designations, the Associate of the SOA, the Chartered Enterprise Risk Analyst ("CERA"), and the Fellow of the SOA (i.e. full fellowship). All designations require passing a multitude of exams in probability and statistics, finance, economics, risk management and actuarial sciences, successful passing of a variety of modules given on-line, and all require fulfilling educational and work requirements.

The Casualty Actuarial Society ("CAS") is the professional association for property/casualty actuaries in the U.S. The CAS grants two designations, an the Associate of the CAS and the Fellowship of the CAS. Both designations require passing a multitude of exams in probability and statistics, finance, economics, risk management and actuarial sciences, and fulfilling educational and work requirements.

The Risk and Insurance Managers Society, Inc., ("RIMS") is the professional association for insurance risk managers in the U.S. and Canada. The RIMS certification is earned through successful completion of a series of workshops and in some cases, on-line courses, organized through RIMS, plus the fulfillment of an educational requirement.

The Global Association for Risk Professionals ("GARP") is the professional association of financial risk practitioners globally. The association grants the Financial Risk Manager (FRM) certification upon successful completion of the FRM exam.

The CFA Institute ("CFA", formerly known as "AIMR") is the professional association for financial analysts worldwide. The CFA Institute grants the Chartered Financial Analyst ("CFA") designation upon mastery of a course of study satisfied by the successful passing of a series of three exams (Levels 1, 2, and 3) and the completion of work requirements.

	CFA	FRM	SOA	CAS	RIMS
RM 701	1,2,3	✓	ERM, R/Op	6	✓
RM 702	1,2	✓	FM, R/Op	2,6	✓
RM 703	1,2,3	✓	FM, MFE, PM	2,3,8	
RM 704	1,2,3	✓	P, MFE, ERM, R/Op	1,2,3,6,8	
RM 705	2,3	✓	FM, ERM, PM, FET	2,3,6,8	
RM 706	3	✓	EMR, MLC	5,6	✓
RM 708	1	✓			
RM 709	1,2,3	✓	P, FM, MFE, FET, FEM	2,3,8	
RM 710	2,3	✓	FM, MFE, FET, PM, ERM	2,3,8	
RM 713	2,3	✓	FM, MFE, FET, PM, ERM	2,3,6,8	
RM 790	2,3	✓	FM, MFE, FET, PM, FEM, P	1,2,3,6,8	

RM 791	2,3	✓	FM, MFE, FET, PM, P	1,2,3,6,8	
ECO 715	1,2,3	✓	FM, MFE, ERM, FEM	2,3,8,9	
MA 621	1,2	✓	P, MLC, C	1,3,4,9	
MA 623	1,2	✓	P, MLC, C	1,3,4,9	
MA 633	1,2	✓	P, MLC, C	1,3,4,9	
MA 635	1,2	✓	P, MLC, C	1,3,4,9	
AC 723	3	✓	P/Op	7	✓

Brief Descriptions of Exams:

Society of Actuaries: Probability (P); Financial Math (FM); Financial Economics (MFE); Financial Economic Theory and Engineering (FET); Portfolio Management (PM); Financial Economics Module (FEM); Financial Reporting and Operational Risk (R/Op); Actuarial Models-Life Contingencies (MLC); Construction of Actuarial Models (C).

Casualty Actuarial Society: Probability (1, equivalent to SOA exam P); Financial Math (2, equivalent to SOA exam FM); Financial Economics (3, equivalent to SOA exam MFE); Construction of Actuarial Models (4); Property/Casualty Insurance and Ratemaking (5); Reserving, Insurance Accounting, Reinsurance and ERM (6); Law, Regulation, Government, Insurance Industry Programs, Reporting, and Taxation (7); Investments and Financial Analysis (8); and Advanced Ratemaking, Rate of Return, Individual Risk Rating Plans (9).

The RIMS curriculum covers insurance risks and insurance risk transfer.

The GARP FRM exam covers all of the above topics but to only a minimal extent for insurance risks and risk transfer to insurance markets.

CFA Institute: Ethics, Quantitative Methods, Economics, Financial Reporting and Analysis, Equity, Fixed Income, Derivatives, Investment Tools, Asset Classes, and Portfolio Management and Wealth Planning (Levels 1 and 2). Level 3 covers all topics except for Quantitative Methods, Economics, and Financial Reporting and Analysis.

APPENDIX B
Examples of Risk Management Job Listings in Industry and Government

Selected Job Postings from the Society of Actuaries
Postings from June 28th – Jul 9th, 2009

1. Risk modeler/Analyst
Hamilton, Bermuda operation is seeking a catastrophe risk modeler for Position 25242. At least three years of cat modeling experience preferred. Master's or Ph.D. degree holders especially sought, or those with at least 2 actuarial exams.

2. Life Actuary
For Position 23555, this recent New York start-up company has made plans to add to their staff. Experienced life actuarial analysts sought. Requires 2 to 12 years of experience. Some experience with financial modeling, programming, valuation, financial reporting or management reporting ideal.

3. Director - Investment Risk
Key management role accountable for leading and implementing effective and efficient risk management investment procedures and processes across Aviva USA. Uses qualitative and quantitative methodologies to measure and assess Aviva USA's risk positions. Reports on risks to internal/external stakeholders.
Central point of contact and communication on all matters pertaining to investment risks. Follows ERM approach to facilitate meetings with business owners to identify, assess, measure, manage and monitor all risk exposures. Responsible for ensuring risk policy embeddedness for investment risk policies, including implementation of technical requirements, documentation, testing and quality assessment procedures to report to Region and Group.

4. Actuarial Student
Prominent Southern California firm is looking for an experienced pension actuarial analyst for Position 27680. Valuations, database programming and financial modeling projects.

5. Life Actuarial Consultant
For Position 28630, this Canadian organization is now looking for a Life FSA to work on enterprise risk management assignments.

Selected job postings from Risk and Insurance Management Society, Inc.

Regency Centers

Job Categories:	Claims Management, Financial Risk Mgmt, Property and Casualty, Risk Control, Risk Financing, Risk Management, Worker's Compensation
Job Type:	Full time
Location:	Jacksonville, Florida
At least	5 Years of Experience Required
Degree Required:	4 year college
Travel Required:	Up to 25%
Date Posted:	06/11/2009
Remote Job:	No
Job Description:	**To apply for this position please visit our website at www.regencycenters.com/careers**

About this Opportunity
Come work with the best and brightest in the Jacksonville commercial real estate industry. Regency Centers offers a unique environment that fosters individual growth and performance. You'll work side-by-side with people you can trust and respect.

Regency is presently seeking a **Senior Manager Risk Management** with commercial property and casualty experience to join our Risk Management team at our Jacksonville, Florida corporate headquarters. You will be working with internal and external customers, including insurance brokers, underwriters, claims adjusters, property managers and leaders in our Construction, Development and Investment departments.

Key Responsibilities

- Responsible for ensuring all insurance policies covering real property, liability, workers compensation, builders risk, executive risk, environmental and all other policy endorsements designed to mitigate the Company's overall risk are complete, renewed and or modified to ensure best possible coverage for Regency.
- Responsible for reviewing the resolution of all property and liability claims filed against Regency by communicating with insurance adjusters, brokers and/or attorneys to determine validity of the claim and negotiating appropriate settlements.
- Gives final approval on all third party property claims for damage to Regency property within prescribed limits.
- Maintains and analyzes property and liability loss activity. Communicates with VP Operations and VP Real Estate Accounting on projected losses, pending claims and potential

litigation.
- Responsible for the performance of all Risk Management department professionals.
- Review acquisition contracts (e.g., leases, loan documents, agreements, etc.) to ensure compliance and conformity with required insurance coverages.
- Manage annual insurance policy renewals.
- Responsible for the issuance of certificates and surety bonds to lenders or tenants, as needed.
- Electronically track underwriting information including building values, rents, environmental issues, flood zone ratings, etc.
- Represent and testify on behalf of Regency at legal proceedings.
- Responsible for maintaining adequate corporate risk management systems to ensure effective reporting and efficient processing of information.
- Responsible for any ad hoc reporting or information needs from Senior Management.
- Manage environmental database with Senior Manager of environmental controls.
- Manage insurance payables on policies, settlements and capture return program.

Qualifications

- Bachelor's Degree in Accounting, Business Administration or related field with five (5) to seven (7) years of commercial property and casualty experience. Experience working with insurance brokers, carriers and underwriters.
- Must be proficient with Microsoft Office software including Excel, Word and PowerPoint. Experience working with J.D. Edwards software preferred.
- Must be skilled in setting priorities with excellent organization and time management skills.
- Must possess excellent interpersonal skills and have the ability to communicate accurately and effectively with all levels of internal and external clients, both verbally and in writing.
- Must possess strong quantitative and analytical skills.
- Must be customer focused with excellent negotiation skills.

To apply for this position please visit our website at www.regencycenters.com/careers

State Office of Risk Management

Job Categories:	Insurance Mgmt / Purchasing, Loss Control / Safety, Risk Control, Risk Management
Tags:	Risk Management, loss control, safety
Job Type:	Full time
Location:	Austin, Texas
At least	2 Years of Experience Required
Salary:	$64,440 - $78,000 per year
Degree Required:	4 year college
Travel Required:	Up to 25%
Date Posted:	05/15/2009
Remote Job:	No

Job Description:

NOTE: SORM is administratively attached to the Office of the Attorney General (OAG) including the Human Resource Department. All applicants must submit an electronic application through www.WorkInTexas.com to be considered for employment.

GENERAL DESCRIPTION
The Director of Risk Assessment and Loss Prevention is selected by and works under the general direction of the Executive Director. With general guidance from the Executive Director, this position has considerable independence and flexibility to direct, organize, plan and prioritize the activities of the Risk Assessment and Loss Prevention Division. This person will develop program goals and objectives, and Division policies and procedures, direct the activities of and supervise the work of division staff to provide effective, timely service to internal and external customers to further the Agency's mission and maintain a mutually supportive relationship with client agencies, SORM employees, other agencies and the public.

JOB FUNCTIONS

* directs the operations of the Risk Assessment and Loss Prevention Division, including the statewide Insurance Program and operates as a member of the agency's executive team; advises the Executive Director on matters affecting the agency
* directs the development and implementation of Risk Management and Loss Control programs of Texas state agencies
* oversees the reviews of state agencies risk financing programs, including risk retention programs and risk transfer through the use of all lines of commercial insurance

* develops innovative strategies to promote risk management and reduce loss in client agencies
* oversees the review of state agencies risk management programs for compliance with state and federal laws applicable to risk management and loss control
* directs the preparation of technical reports and procedures for risk management program reviews and consultations
* oversees the analysis of loss data relating to state agencies loss control programs and provides guidance on techniques to reduce these losses
* oversees the maintenance of the reporting system used by client agencies for upcoming visits
* oversees the agency's business continuity plan
* presents information to the State Office of Risk Management Board of Directors
* coordinates with Governor's Office and other state agencies on emergency and disaster recovery issues
* develops goals and objectives consistent with the agency strategic plan
* attends work regularly in accordance with agency leave policy
* complies with all agency policies and procedures, including but not limited to applicable security and safety rules, regulations and standards
* promotes the agency's mission and philosophy by participating in public forums
* performs related work as assigned

MINIMUM QUALIFICATIONS

* high school graduation or equivalent

* graduation from an accredited four year college or university with a major in business, public administration, insurance, risk management, safety, or a related field; may substitute full-time experience in risk management, insurance, or closely related experience for required education on a year for year basis
!* two additional years of full-time experience in risk management, risk assessment/loss prevention planning and operations, establishing goals and objectives, program coordination and evaluation
* knowledge of principles and operational considerations of Enterprise Risk Management
* experience in the planning and directing of risk management, loss control, and safety programs
* highly skilled in effective verbal and written communication [Writing sample required with application and at time of interview - Submit electronic writing sample to applicationdesk@oag.state.tx.us . E-mail subject line and document title must follow this order:

employer posting number job seeker ID_firstname_lastname_WS]
* valid Texas drivers license with a good driving record [Applicants may be subject to a motor vehicle registration check]

PREFERRED QUALIFICATIONS

* ARM, CRM, CPCU or related professional certification
* Masters degree in field related to risk management, insurance or public administration
* experience in purchasing/managing property and casualty insurance
* experience working for a Texas state agency

Contact Name:	Gail McAtee
Contact Email Address:	gail.mcatee@sorm.state.tx.us
Contact Phone Number:	512-936-1501

APPENDIX C
COURSE DESCRIPTIONS FOR REQUIRED COURSES

Courses in Accounting

600. Financial Accounting Theory and Practice – Part 1. 4 hr.; 4 cr. Prereq.: matriculation in M.S. Accounting Program or the M.S. in Risk Management Program. First required course for students having an undergraduate degree in other than accounting, wishing to enter the Master of Science in Accounting Program at Queens College. This course provides the fundamental understanding of the language of business as expressed in financial reports. It continues into an intensive study of the theories of financial accounting, generally accepted accounting principles, and relevant opinions and statements of the AICPA, FASB, and the SEC.

601. Financial Accounting Theory and Practice – Part 2. 4 hr.; 4 cr. Prereq.: Accounting 600. Second required course for students having an undergraduate degree in other than accounting, wishing to enter the Master of Science in Accounting Program or the Master of Science in Risk Management at Queens College. This course continues the intensive study of the theories of financial accounting, generally accepted accounting principles, and relevant opinions and statements of the AICPA, FASB, and the SEC. It also involves mathematical principles and applications thereof to accounting.

602. Financial Accounting Theory and Practice-Part 3. 3 hr.; 3 cr. Prereq.: Accounting 601. Theory of accounting applicable to problems peculiar to large-scale business operations, including the problems of accounting for mergers, insolvencies, branch operations, liquidations and the preparation of consolidated financial reports. Relevant opinions of the AICPA, FASB, and the SEC.

603. Concepts of Managerial Accounting. 4 hr.; 4 cr. Prereq.: Accounting 601. The concepts and procedures used to account for the cost of manufacturing and selling, with their practical application in different types of cost accumulation systems (for example job-order, standard and process costing). The application of various techniques in managerial decision-making, inventory management, capital budgeting, and capital investment decisions.

604. Concepts of Auditing and Computer Auditing. 4 hr.; 4 cr. Prereq.: Prerequsite:Accounting 601; Corequisite: Accounting 602. Auditing and other forms of assurance services applicable to the accounting profession. Auditing procedures, including applications to computerized systems; test of internal controls and substantive audit procedures performed by CPAs. Introduction to statistical sampling applicable to audit engagements. Review of relevant pronouncements of AICPA, SEC and PCAOB as well as ethical standards expected of CPAs.

605. Introduction to Business Law. 4 hr.; 4 cr. Introduction to key concepts of business law including contracts, agency, forms of business organization, personal and real property and employment and elder law. The basic structure through which law is implemented and enforced is reviewed.

606. Federal and New York State Taxes on Income. 4 hr.; 4 cr. Prereq.: Accounting 600. An introduction to the federal and state income taxes as they relate to individuals. This accelerated course will emphasize the basic multitiered tax structure. Inclusion, exclusion, and deduction are defined, utilizing the Internal Revenue Code and related material. Special classes of taxpayers including partnerships and corporations are

considered as well as accounting and procedural rules.

707. Contemporary Issues in Management Accounting. 3 hr.; 3 cr. The purpose of this course is to build upon the basic concepts of management accounting introduced in Accounting 305/306. The most current theories and practices that comprise Accounting 707 have been developed over the past decade in response to rapid changes in the external and internal environment that business organizations face. Accounting 707 will examine in depth the most recent management accounting literature with respect to: 1) information that managers need for decision making, and 2) the role of the management accounting in the accumulation, analysis, and use of that information. Open to students who have completed an undergraduate degree in Accounting or who have completed the graduate foundation coursework for the M.S. in Accounting or the M.S. in Risk Management Accounting/CPA concentration or permission of the department.

712. Advanced Financial Accounting Theory. 3 hr.; 3 cr. The emphasis of this course is on the examination of current issues and research methodologies related to accounting theory in such areas as the objectives of financial statements, financial statement elements, asset-valuation concepts, income-determination models, and cutting-edge topics under scrutiny by the accounting profession. Students will analyze the literature in accounting theory relating to current pronouncements of the Financial Accounting Standards Board and prior pronouncements of the Accounting Principles Board and Committee on Accounting Procedure. A primary focus will be the application and influence of accounting theory on the development of current Generally Accepted Accounting Principles and corporate financial reporting. Open to students who have completed an undergraduate degree in Accounting or who have completed the graduate foundation coursework for the M.S. in Accounting or the M.S. in Risk Management Accounting/CPA concentration or permission of the department.

723. Advanced Auditing theory and Practice. 3 hr.; 3 cr. This course focuses on the philosophical aspects of the professional accountant's relationship with clients and third parties. Accordingly, the Code of Professional Conduct issued by the American Institute of CPAs (AICPA) is examined in detail. The auditing pronouncements issued by the AICPA are analyzed in detail. Requirements of the Securities and Exchange Commission are also explored. Other areas scrutinized are compilation and review, attestation engagements, statistical sampling and auditing in an electronic data processing environment. The case method is used in solving problems of a more complex nature. Open to students who have completed an undergraduate degree in Accounting or who have completed the graduate foundation coursework for the M.S. in Accounting or permission of the department.

747. Communications and Accountants. 3 hr.; 3 cr. The examination both verbally and non-verbally, of communications required in the business life of an accountant. The objectives of this course will be to enhance the ability to write, speak, and listen more effectively in the business environment. Topics covered will be writing a resume and a job application for an accounting position, writing instructions to staff for an audit, writing a letter to a client on the results of an audit, preparing an analysis of an annual report, communicating during an interview and a business meeting, listening skills, and preparing a financial presentation with multimedia aids. Open to students who have completed an undergraduate degree in Accounting or who have completed the graduate foundation coursework for the M.S. in Accounting or permission of the department.

748. Advanced Accounting Information Systems. 3 hr.; 3 cr. Methods and techniques of using accounting as an information systems. The design, analysis, installation, and

evaluation of a system, either manual or computer-based, will be covered. Topics will include accounting systems theory, design theory, accounting file structure, implementation, maintenance, and evaluation of the system. General ledger software and database programs will be discussed and used in the classroom. The use of the Internet and expert systems as they relate to accounting information will be included. Open to students who have completed an undergraduate degree in Accounting or who have completed the graduate foundation coursework for the M.S. in Accounting or the M.S. in Risk Management Accounting/CPA concentration or permission of the department.

752. Advanced Studies in Business Law. 3 hr., 3 cr. The course examines the Uniform Commericial Code, with particular emphasis on sales, law, commercial paper, and the laws of secured transactions. Laws relating to bankruptcy, suretyship, as well as laws specifically applicable to accountants' professional responsibilities, including securities laws and corporate governance, will also be examined. Open to students who have completed an undergraduate degree in Accounting or who have completed the graduate foundation coursework for the M.S. in Accounting or the M.S. in Risk Management Accounting/CPA concentration or permission of the department.

757. Taxation of Business Entities. 3 hr.; 3 cr. This course focuses on the taxation of the primary forms of business entities: sole proprietorship, corporations, including S corporations, and partnerships, including limited liability companies (LLCs). The decision process necessary to select a particular type of business entity as well as the tax advantages and disadvantages inherent in the operations, liquidation, and termination of these entities will be stressed. Emphasis is placed on tax planning, problem solving, and research. Open to students who have completed an undergraduate degree in Accounting or who have completed the graduate foundation coursework for the M.S. in Accounting or the M.S. in Risk Management Accounting/CPA concentration or permission of the department.

Courses in Computer Science

688. Advanced Productivity Tools for Business. 2 hr. lec., 2 hr. lab.; 3 cr. Prereq.: CSCI 012 or equivalent. Computing technology for students in business and finance-related disciplines. Advanced analytic techniques with an emphasis on spreadsheet topics such as financial functions and formulas, pivot tables, charting, and macro programming. Integration of spreadsheets, databases, and presentation tools for analysis and report generation.

‡765. Computational Finance. 3 hr., 3 cr. Prereq: CSCI 313 and Math 241; or CSCI 314 and Econ 249. Valuation of financial derivatives is studied as a family of algorithmic computations, centering on about fifty selected algorithms: input-output specification, efficiency analysis, implementation practice, and model origins.

780. Special Topics in Computer Science. 3 hr., 3 cr. May be repeated for credit for differing titles.

Courses in Economics

601. Introduction to Micro and Macro Economics. 4 hr.; 4 cr. Prereq.: Math 131 OR equivalent. Principles of microeconomics and macroeconomics. Analysis of the economy as a distinctive whole that is also composed of multiple small parts. Critical examination of economic theories and policies, especially as they are used by

government officials to shape and guide the economy.
602. Introduction to Corporate Finance and Money and Banking. 4 hr.; 4 cr. Prereq.: Economics 601 or equivalent. Principles of banking and financial economics. Topics include interest rates, financial markets, financial institutions, the money supply and monetary policy, and how the financial system operates in a macro economy.
649. Statistics as Applied to Economics and Business. 3 hr. plus 1 lab. Hr.; 3 cr. Prereq.: Economics 601 or equivalent, and Math 131 or equivalent. Descriptive statistics, elementary probability theory, sampling statistical inference, estimation, correlation and regression. Statistical applications will be on business and economics-related topics.
715. Corporate Finance. 2 hr. plus conference; 3 cr. Prereq.: Business 241 or equivalent. The theory of investor and firm behavior in financial markets under uncertainty. Among the topics discussed are portfolio theory, the capital asset pricing model, arbitrage pricing theory, asset valuation theory, and optimum firm decision-making rules with regard to capital structure, and dividend policy. Students who have taken BUS 341 will not receive credit for the course.

Courses in Mathematics

621. Probability. 3 hr.; 3 cr. Prereq.: A semester of intermediate calculus (the equivalent of Mathematics 201) and an introductory course in probability, or permission of Chair. Binomial, Poisson, normal, and other distributions. Random variables. Laws of large numbers. Generating functions. Markov chains. Central limit theorem.
623. Operations Research (Probability Methods). 3 hr.; 3 cr. Prereq.: Course in probability theory (such as Mathematics 241). An introduction to probabilistic methods of operations research. Topics include the general problem of decision making under uncertainty, project scheduling, probabilistic dynamic programming, inventory models, queuing theory, simulation models, and Monte Carlo methods. The stress is on applications.
633. Statistical Inference. 3 hr.; 3 cr. Prereq.: A semester of intermediate calculus (the equivalent of Mathematics 201) and either an undergraduate probability course which includes mathematical derivations or Mathematics 611 or 621. Basic concepts and procedures of statistical inference.
635. Stochastic Processes. 3 hr.; 3 cr. Prereq.: Mathematics 611 or 621. A study of families of random variables.

Courses in Risk Management

‡701. Enterprise Risk Management. 3 hr., 3 cr. Prereq: Completion of the graduate foundation curriculum for the M.S. in Risk Management or permission of the program director. The course provides a broad overview of why managing risk is important to organizations and of the risk management function. The course utilizes the enterprise risk management framework to identify sources of value and stakeholder objectives, to categorize events that pose risk, to determine the organization's appetite for risk and to determine levels of risk retention. The course covers various risk types and examines how each is quantified, transferred, or retained and priced-for. The course is case study and group-study intensive.

‡**702. Accounting for Risk Management.** 3 hr., 3 cr. Prereq or coreq: RM 701. This course is intended to provide graduate level exposure to accounting theory for students enrolled in the M.S. in Risk Management program. The course will cover essentials of the conceptual framework of accounting and will focus on issues affecting recognition and measurement of the economic events that affect financial statements in particular, those that affect the firm's risk profile and risk transfer. The course will not be open to M.S. in Accounting students. RM 701, Enterprise Risk Management, is a pre- or co-requisite. Credit will not be given for this course if ACC 350 or BUS 250 has already been taken.

‡**703. Investment Analysis.** 3 hr., 3 cr. Prereq: ECO 602 or BUS 241. The course will focus on the application of financial theory to the issues and problems of investment management. Topics will include bond valuation and strategies, stock valuation and strategies, portfolio optimization and asset allocation, the CAPM, Arbitrage Pricing Theory, and their implications for investment management. The course will first examine the valuation and selection of various investment instruments, then move on to cover portfolio optimization issues and risk management. The topics covered are included in the CFA Institute's exams required for the Chartered Financial Analyst designation.

‡**704. Risk Measurement.** 3 hr., 3 cr. Prereq: Completion of basic foundation coursework. Pre or coreq: RM 701. This course provides an in-depth review of the fundamentals of probability and statistics, followed by the measurement of various risk types. The course examines instances of market failure, the role of collateralization requirements, the impact of term, time horizon, and covariance, and extreme value theory. The course also covers probabilistic and stochastic risk modeling, calculations of value-at-risk, stress testing, and other risk metrics, and the limitations of each of these measures.

‡**705. Risk Transfer to Financial Markets.** 3 hr., 3 cr. Prereq: RM 701, RM 703 or RM 704 or BUS 350. Students will learn how derivatives are created and used for speculation, hedging and arbitrage. Most class time will focus on solving for equilibrium prices and learning price parity theorems of options and futures. These theorems and their assumptions make this course highly technical. Students will learn how to download and analyze data from the Bloomberg Terminal. Through virtual electronic trading students will get the chance to implement conceptual tools such as profit and loss diagrams, option trading strategies, binominal trees, option greeks, and the Black-Scholes formula. Students will learn how to minimize risk with futures through immunization, asset allocation, and duration matching.

‡**706. Risk Transfer to Insurance Markets.** 3 hr., 3 cr. Prereq: Undergraduate degree in accounting or completion of graduate foundation coursework for M.S. in Risk Management or Accounting or permission of Risk Management program director. Recommended: RM 701. This course examines risk transfer to insurance markets. Topics covered will include the variety of ways that risk transfer can occur including quota share and excess of loss agreements, catastrophe bonds, captives, reciprocals, segregated cells, and their structuring, such as retentions, limits, corridors, collateralization, reinstatement, and commutation provisions, and structured/financial insurance. Insurance products will be evaluated for their efficiency in risk transfer. How effective insurance markets are relative to capital markets will be evaluated in terms of terms and conditions, pricing, and basis risk.This course covers the utilization of products traditionally purchased by the corporate risk manager for risk transfer and risk financing of traditional business

(operational) and insurance risks including asset and liability risks inherent in pension funds.

‡**707. Financial Statement Analysis.** 3 hr., 3 cr. Prereq: RM 702 or Accounting 201 and 202. Analyses are made of financial statements of public companies from the perspective of investors, management, creditors, accountants and auditors. Financial statements and related disclosures will be analyzed to gain a perspective on a company's health. Business valuation models and techniques to develop forecasts and pro forma results will be discussed and illustrated. Ratio analysis and key performance indicators will be emphasized with a case study approach to this subject. Credit will not be given if ACC 350 or BUS 250 has been taken.

‡**708. Financial Econometrics.** 3 hr., 3 cr. Prereq: RM 704 or Math 241 or permission of the instructor, ECO 721 or 382 or BUS 384. The course covers modern statistical and econometric techniques necessary for both professional and academic quantitative research in finance. Particular emphasis will be placed on measuring and analyzing the risk of holding and trading financial assets. Topics include: autoregressive and moving average models, Autoregressive Conditional Heteroskedasticity (ARCH) models, Generalized Autoregressive Conditional Heteroskedasticity (GARCH) models, analysis of high frequency intraday financial data. May not be taken for credit if BUS 386 has already been taken.

‡**709. Portfolio Management.** Prereq: RM 703 or BUS 350. This course provides a detailed examination of portfolio management. Topics include: definition and measurement of risk, market efficiency, testing for inefficiencies, components and determinants of trading costs, mechanics of creating and managing a portfolio and investment philosophies. The mechanics of creating and managing a portfolio are illustrated for both bonds and equities. May not be taken for credit if BUS 352 has already been taken.

‡**710. Fixed Income Instruments.** 3 hr., 3 cr. Prereq: RM 703 or BUS 350, completion of basic graduate foundation coursework. The course exposes students to an in-depth analysis of the concepts encountered in the market for fixed income securities. The student will develop tools to price bond and money market instruments, understand the term structure of interest rates, analyze the Treasury yield curve, and evaluate credit yield spreads. The course illustrates hedging and other trading and portfolio strategies, and explores fixed income derivative instruments.

‡**790. Applied Dynamic Financial Analysis.** 3 hr., 3 cr. Prereq: RM 701, RM 702, RM 705, and either RM 703 or RM 704. This course may be taken concurrently with RM 703 or RM 704 with permission of the program director. This is the capstone course for the Risk Management program, in which students will run a dynamic financial analysis for a corporation, modeling its financial asset and liability exposures, and estimating future cash flow, time-varying exposures, and covariance across exposures. Students will build models with applications either to pension funds, life insurance, non-life insurance, banking, and treasury/funding operations.

‡**791. Dynamic Financial Analysis Model Building.** 2 hr. plus conf. Prereq: RM 790. In this course, students will contribute to the building and development of Dynamic Financial Analysis (DFA) models tailored to a financial institution, non-financial corporation, or pension fund. The DFA model is an asset-liability management model in which an organization's asset and liability values are forecasted over time and simulated by allowing economic, financial, and other business drivers of the cash flows to vary stochastically, in a dynamic and simultaneous fashion, using Monte Carlo and other

simulation methods. The course is open to students only by invitation of the Program Director.

‡**792. Special Topics in Risk Management.** 3 hr., 3 cr. Prereq: RM 701. Other pre-requisites or co-requisites will vary with the particular topic, or with permission of the program director. This course will be a seminar in risk management covering a special topic as it relates to risk management, such as corporate governance, behavioral finance, or corporate strategy.

‡ Indicates new course.

APPENDIX D
SYLLABI FOR NEW COURSES

Syllabus
RM 701 Enterprise Risk Management

Professor:
Lecture Time and Location:
Lab Meeting Time and Location:
Office Hours and Location:
Email and Telephone:

Course Description
The course provides a broad overview of why managing risk is important to organizations and of the risk management function. The course utilizes the enterprise risk management framework to identify sources of value and stakeholder objectives, to categorize events that pose risk, to determine the organization's appetite for risk and to determine levels of risk retention. The course covers various risk types and examines how each is quantified, transferred, or retained and priced-for. The course is case study and group-study intensive.

Prerequisite: Completion of the graduate foundation curriculum for the M.S. in Risk Management or permission of the program director.

Required Text, Required Reading and Other Required Materials:
1. *Managing Financial Risk: A Guide to Derivative Products, Financial Engineering, and Value Maximization, 3rd Edition*, by Charles W. Smithson. McGraw Hill, ISBN 0-07-059354-X, 1998.

2. *Against the Gods: The Remarkable Story of Risk,* by Peter L. Bernstein, 1996, John Wiley & Sons, ISBN: 0-471-29563-9.

3. Case Studies and Additional Readings, which will be assigned throughout the semester and posted on Blackboard.

4. Access to a computer and financial or engineering calculator.

Course Objectives:
The course is designed to give students a broad appreciation of the many facets of risk management and the roles that quantitative analysis, ethics, accounting, judgment, regulation, organizational structure, and markets play in effective risk management. The course also seeks to have students able to synthesize what they have learned in evaluating cases, and being able to effectively communicate their findings, both in class presentations and in short written assignments.

Pedagogical Approach:
All students will be part of a work-group of approximately 4 students. Groups will be made during the first week of class and last throughout the semester. Groups are expected to work on, complete, and hand-in verbal and quantitative assignments together, and make class presentations and work on case studies together. If your group partners are unsatisfied with your contribution to the group and notify me in writing, you either will be re-assigned or work on your own.

The course is writing and presentation intensive and your grade will reflect your ability to communicate effectively.

Labs:
Labs will be used for group work. Attending the lab is mandatory and is essential to the course. Group lab assignments and case studies will form the predominant part of the homework assignments. Your lab instructor will assist your group by helping to clarify the week's material or the assignments. Lab time should be used to work on group homework assignments and you should expect to follow up with your group partners outside of the lab time, committing to a significant amount of time working together outside of the lab.

Homework:
Homework will be assigned predominantly to groups although occasionally at the individual level. In both cases, students are encouraged to work cooperatively with their groups.

Case Studies:
Case studies constitute an integral part of the course, allowing students to apply what they have learned about identifying, measuring, and managing risk in a real-world situation. Cases cover actual events involving institutions facing risk exposures, and either ignoring, managing, or assuming them for returns. Case readings will be posted on Blackboard, and students will be assigned the readings with specific questions to answer either in written form or in class presentations.

Exams:
Work submitted must be your own, either as individuals or as a group. You must properly cite the sources used. While you are encouraged to work on homework collaboratively, exams are to be taken independently. Plagiarism and cheating, therein, will automatically result in a zero grade *and* disciplinary action to its fullest extent, as prescribed by **CUNY's POLICY ON ACADEMIC INTEGRITY:** Academic Dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension, and expulsion as provided at: http://qcpages.qc.cuny.edu/provost/policies/index.html

Grades will be determined as follows:
Group Assignments and Case Studies: 30%
Midterm Exam: 25%
Final Exam: 30%

Constructive class participation and attentiveness: 15%

Course Topics: Tentative, with sequence subject to change.

Week 1: A History of Risk

What is Risk?

Why does risk matter and to whom?

Week 2: Risk Preference

Risk and utility, Risk Preference, Bernoulli and Expected Utility, Von Neumann and Morgenstern, Certainty Equivalents, Prospect Theory.

Week 3: Risk and Return

Markowitz's Efficient Frontier, CAPM, Systematic and Unsystematic risk.

Week 4 – 9: Identifying and Measuring Risk

Credit, interest rate, liquidity, foreign exchange, systemic, traditional operational, and new risks on the horizon.

Week 10-11: Risk Transfer

How much and at what price: Identifying, tools used to transfer, and measuring basis risk. Alternative risk transfer.

Weeks 12-13: Risk Assumption

How much and at what price: Risk retention, risk pricing, allocating capital and measuring returns on a risk-adjusted basis.

Week 14: Corporate Governance and Control

Processes, technology, and management.

Week 15: Accounting for risk and The Regulatory Environment

Guest Lectures—Tentative Topics

- Internal Control
- Post-Mortems on failed companies
- Cat Bonds and other insurance linked securities
- Asset-Liability Management for Pension Funds
- Mortgage backed securities and the current crisis

Case Studies—To be assigned throughout the semester, dates to be posted.

- The Fall of Bear Stearns
- AIG and Securities Lending
- Debt Protection and Contractual Liability Policies
- Gen Re and AIG—When nice guys go to jail.

Lecture notes will be posted on Blackboard within a few days after class.

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B) Policy for make-up exams: There are no make up exams given, unless there is a true emergency with proper documentation.

C) Late submission of homework/case studies: Homework must be submitted both as a paper copy and electronically by the due date. Late assignments will not be graded.

D) Tardiness: Late arrival, while at times avoidable, is disruptive to your classmates and to the professor. Please make every effort to be on time.

E) Turn off all cell phones, PDAs, and computers when you enter the classroom.

F) Contacting me: My QC email address is the best way to reach me. Please state the course and your name in the subject line of the email. I will make all efforts to respond promptly. However, a last-minute email, call or visit on your part informing me of a late assignment, missed class, or inability to take an exam will not be acknowledged unless there is a true emergency that is documented. Please note that email correspondence reflects upon your ability to effectively communicate and upon your professionalism.

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Syllabus

RM 702 ACCOUNTING FOR RISK

Professor:
Lecture Time and Location:
Office Hours and Location:
Email and Telephone:

Course Description
This course is intended to provide graduate level exposure to accounting theory for students enrolled in the M.S. in Risk Management program. The course will cover essentials of the conceptual framework of accounting and will focus on issues affecting recognition and measurement of the economic events that affect financial statements in particular, those that affect the firm's risk profile and risk transfer.

Course Objectives
Students should gain an understanding of the conceptual framework of accounting, the relationship of accounting standards to that framework, and the ability to analyze specific economic events of the assigned cases for their accounting implications. The latter involves developing the ability to consider the substance of an economic event and present alternative approaches to accounting for that event. Students will develop the ability to identify and interpret accounting standards that are pertinent to the assigned cases.

Course Prerequisites
The course will not be open to M.S. in Accounting students. RM 701, Enterprise Risk Management is a pre or co-requisite. Credit will not be given for this course if ACC 350 or BUS 250 has already been taken.

Course Description
Among the topics to be covered are the following:

1. Rules-based accounting vs. principles-based accounting
    a. US-Generally Accepted Accounting Principles vs. International Financial Reporting Standards
    b. The pros and cons of each approach
2. Concepts – Income recognition
    a. Revenues and expenses
    b. Gains and losses
    c. Comprehensive income
3. Concepts – Assets and liabilities
    a. Recognition and de-recognition
    b. Contingencies

Within the above broad areas, the course will cover such topics as accounting for investments, leases, pensions, share-based compensation, and financial instruments. Topics will necessarily involve consideration of materiality and risk and the importance of fair value accounting in financial reporting.

Pedagogical Approach
Because this is a course in theory and concepts accounting entries [that is, debits and credits] will be deemphasized in favor of developing an understanding of, and ability to identify, the substance of economic events.

Case studies constitute an integral part of the course, allowing students to apply what they have learned about accounting in a real-world situation. Cases involve actual events involving institutions and economic events. Students will be assigned case readings with specific questions to answer in written form or for class presentation. Students should be prepared for each class and are assumed to have done the required readings in advance of class and should be prepared to respond to questions on the day's topics.

Textbooks:

- Schroeder, R. G., M. W. Clark, and J. M. Cathey. *Financial Accounting Theory and Analysis.* 8th Ed. McGraw-Hill. [ISBN: 0-471-65243-1]
- Johnson, L. T. and K. R Petrone, *The FASB Cases on Recognition and Measurement*. 2nd ed. Financial Accounting Standards Board. [ISBN: 0-471-12987-9]

Article:

- Schipper, K. "Principle-Based Accounting Standards". *Accounting Horizons*. V17 No 1. March 2003. pps. 61-72.

Additional on-line information sources:

www.fasb.org -- provides full-text Financial Accounting Standards Board (FASB) pronouncements [Statement of Financial Accounting Standards, Emerging Issues Task Force, Statement of Financial Accounting Concepts, FASB Interpretations]
www.sec.gov – provides access to filings of Securities and Exchange Commission registrants, as well as enforcement procedures and staff accounting bulletins.
Links to specific readings will be given out during the semester as cases are assigned.

Assignments and Grading

Most of the cases were developed by the FASB staff. Some of the assignments contain unfamiliar elements or terms that have not been discussed or covered in the reading material. Use the textbook index to find them elsewhere in the book. If necessary to complete a case, make and state assumptions as to how you are proceeding. Requirements:

1. Readings should be completed prior to classroom discussion.
2. Assignments should be prepared for classroom discussion or hand-in, as specified.
3. All work must be typed and in good professional form.
4. Assignments should be submitted to the Grade Center in Blackboard.

Grading

Cases are graded according to the following scheme:

0	Solution is turned in late or not at all.
60	Solution is on time, but one or more requirements are not met.

75-100	Solution is on time, and each requirement is met with analysis that is clearly explained and well supported and documented.

Participation grades will be based on student participation in class discussion.

Grading:	**Weights**
Cases	70%
Final Exam	20%
Participation	10%

Tentative Class Schedule

Session	Subject	Reading	Cases
1	Introduction, concepts, rules v. principles The conceptual framework	Ch 2-3 AH, Mar 2003, 61-72* SFAC 6	FASB- Barter
2	Financial Statement format Accounting changes and adjustments Prior period adjustments Comprehensive income	Ch 6	FASB-Sabbatical
3-4	Revenue recognition, Income concepts	Ch 5 to p142 SAB 101/4	FASB-Health Spa MagazineSubscription I Leisure Home Insurance
5-6	Expenses and capitalized costs – matching principle	Ch5, p142-end SFAS 2,19,86	Case 5-8 FASB-Plumbing Toxic Dump Loan Commitment
7	Impairment	Ch 9 p285-end	FASB-Idle Drilling Rig
8	Contingencies	Ch 11 p362-5 SFAS 5	FASB-Bonus Magazine Subscription II Production Rights Case 11-10
Session	**Subject**	**Reading**	**Cases**
9	Investments & Intangibles	Ch 10 SFAS 115	Case 10-5 10-6 10-8
10	Pensions & Post-retirement Benefits	Ch 14 SFAS 159	HJ Heinz 10-K Ford Motor Co 10-K Case 14-6
11	Foreign Currency Translation	Ch 16 p 522-530 SFAS 52	Pepsico 10-K
12	Asset Securization & Derecognition; Special Purpose Entities	Ch 16 p513-518 SFAS 140	American Express 10-K

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B) Policy for make-up exams: There are no make up exams.

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F) Contacting me: My QC email address is the best way to reach me. Please state the course and your name in the subject line of the email. I will make all efforts to respond promptly. However, a last-minute email, call or visit on your part informing me of a late assignment, missed class, or inability to take an exam will not be acknowledged unless there is a true emergency that is documented. Please note that email correspondence reflects upon your ability to effectively communicate and upon your professionalism.

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Syllabus

RM703 Analysis of Investment and Market Risk

Professor:
Lecture Time and Location:
Office Hours and Location:
Email and Telephone:

Course Description
Topics will include bond valuation and strategies, stock valuation and strategies, portfolio optimization and asset allocation, the CAPM, Arbitrage Pricing Theory, and their implications for investment management. The course will first examine the valuation and selection of various investment instruments, then it move on to cover portfolio optimization issues and risk management.

Course Objectives
The course will focus on the application of financial theory to the issues and problems of investment management. The topics covered are included in the CFA Institute's curriculum and course of study and as such will help students prepare to meet requirements to obtain the CFA charter holder designation.

Course Prerequisites
ECO 715 and ECON 649 or equivalent. Spreadsheet proficiency is essential.

Required Text
Frank Reilly and Keith Brown *Investment Analysis and Portfolio Management,*
Southwestern College Publisher, 9th edition, ISBN: 0324656122. [RB]

Pedagogical Approach
Students are assumed to have done the required readings in advance of class. Students should be prepared to be called upon in class and to respond to questions on the day's topics. Cases form an integral part of the class, allowing students to analyze real world situations, apply the concepts learned in the course, and attempt to effectively communicate their findings.

Course Requirements & Grading
There is one group case study, homework assignments, two midterms and one final exam. Case grades will be based on writing, analytical quality and a Powerpoint presentation. Each case write-up should include an executive summary and clear, well-designed exhibits for presentation. The case is due by the date of the in-class discussion. Homework must be turned in on time to receive a grade. However, you will be allowed one and only one missed homework for the semester.

Homework	5%
Participation in Class Discussion	5%
Case	10%
Midterm Exam 1	25%
Midterm Exam 2	25%
Final Exam	30%

Course Schedule, Tentative

Lecture	Topic	Reference Reading
Lecture	Review of basic concepts, risk	RB Chs. 1-4.

1	management	
Lecture 2	Value at Risk	Power point reading
Lecture 3	Annuity and bonds valuation	RB Ch. 17
Lecture 4	Bonds pricing and term structure of interest rate	RB Ch. 18
Lecture 5	Bond Strategies	RB Ch. 19
Lecture 6	Risk and Return	RB Ch. 5, and Black, "*Estimating Expected Return*," *Financial Analyst Journal* 1993, 36-8.
Lecture 7, case presentation	Case: Philippe Jorion's Orange County Case: Using Value-at-Risk to Control Financial risk **http://www.merage.uci.edu/~jorion/oc/case.html**	see Value at Risk: A Two Day Course, http://www.contingencyanalysis.com/glossaryriskmetrics.com
Lecture 8	Efficient market hypothesis	RB Ch. 6
Lecture 9	Portfolio theory	RB Ch. 7
Lecture 10	CAPM	RB Ch. 8 Fama, E.F. and K.R. French, 1992, "The Cross-Section of Expected Stock Returns," *Journal of Finance, 47*, 427-465.
Lecture 11	Factor Models and APT, Market Neutral Strategies	RB Ch 9 Fama, E.F. and K.R. French, 1996, "Multifactor Explanations of Asset Pricing Anomalies," *Journal of Finance, 51, 55-84.*
Lecture 12	Anomalies	Fama, E.F. and K.R. French, 2008, "Dissecting Anomalies", Journal of Finance, 63, 1653-1678.
Lecture 13	Mutual Fund & Hedge Fund Performance: evaluation methods & history	RB Chapter 25, Sharpe, W.F., 1992, "Asset Allocation: Management Style and Performance Measurement," *Journal of Portfolio Management, 18*, 7-19.
Lecture 14	Behavioral Finance	Odean, T. 1998, "Are Investors Reluctant to Realize heir Losses?" *Journal of Finance*, *53*, 1775-1798.
Final exam		

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Course Syllabus RM 704
Risk Measurement

This course provides an in-depth review of the fundamentals of probability and statistics, followed by the measurement of various risk types. The course examines instances of market failure, the role of collateralization requirements, the impact of term, time horizon, and covariance, and extreme value theory. The course also covers probabilistic and stochastic risk modeling, calculations of value-at-risk, stress testing, and other risk metrics, and the limitations of each of these measures.

Course Prerequisites
Pre- or Co-requisite: Risk Management ("RM") 701

Reading Material

Textbooks:

1) *Financial Risk Management*, Steven Allen, Wiley & Sons, 2003. ISBN: 0-471-21977-0. ["SA"]
2) *Statistics: Principals and Methods 5th Ed.,* Richard Johnson and Gouri Bhattacharyya, John Wiley & Sons, 2005. ISBN: 978-0-471-65682-1. ["JB"]

Readings: As posted on Blackboard and including, but not limited to: Bear Stearns (*Wall Street Journal* 3 part series, 2008).

Objective

The course will provide in-depth coverage of commonly used statistical measurements of risk and will cover risk measurement by risk type, both on specific assets and liabilities, and on the organization's total valuation. Students will evaluate the impact of term, time horizon, covariance, extreme value and tail risk; measure variance, covariance, semi-variance; and examine the probability distributions of certain economic and financial variables. Students will be introduced to the variety of modeling techniques commonly used to measure risk, such as VaR, scenario analyses, Monte Carlo methods and stochastic risk modeling approaches. Valuation and corporate finance principles will be reviewed to provide the basis of measuring risk to the drivers of future free cash flows, including cost of capital, certainty equivalence, RAROC, and limitations to expected value calculations.

This course will be calculation intensive. Students are expected to have a high degree of comfort working with numbers and performing algebraic manipulations and calculations, and are expected to have a solid foundation in statistics.

This course may be taken concurrently with Risk Management Electives.

Topics—Tentative and subject to change.

1. Week 1 – 4: Basic Concepts in probability and statistics: Classical v. Bayesian approaches; laws of probability; density and distributions; properties of sample means; variance, skewness, kurtosis; binominal, Poisson, normal, log normal, and other univariate distributions; multivariate distributions, covariance, correlation. Statistical inference, confidence intervals, Central Limit Theorem, hypothesis testing. Stochastic processes in discrete and continuous time; mean-reverting processes and random walks. JB, selected chapters.

2. Week 5 – 6: Credit risk and its measurement, including creditor rights, perfection of interest, jurisdiction, netting and rights of offset, case law; Measuring default and recovery rates, historical and predictive; uses and limitations of market data. Understanding credit risk embedded in structured credit products. SA Ch. 12.

3. Week 7 - 9: Market risk and its measurement, including asset price risk, interest rate risk, macroeconomic risk, historical price performance vs. predictive modeling, correlation with credit, operational, and liquidity risk. SA Chs. 3, 5.

4. Week 10 - 11: Foreign Exchange risk and inflation, relative macro policy, sovereign risk. Understanding currency valuation and accounting translation. SA Ch. 7.

5. Week 12-13: Liquidity risk and its measurement, including identifying liquidity risk, market failure, collateralization requirements, access to capital markets, and lessons from auction rate securities markets and 2008. *WSJ*, Bear Stearns 3 part series, 2008.

6. Week 13-14: Operational risk and challenges to measurement. SA Ch. 2.

7. Week 15: Review and Exam

Expectations and Grading

Students are expected to attend each class and to participate in class discussions. Students will work collaboratively on homework assignments as part of a work group. Work groups will prepare several presentations during the semester and all students are required to participate fully with their group for full credit. The course will be communication intensive, both orally and in written form, and the ability to articulate risk measurement problems and solutions will be a focus area.

In lieu of a mid-term exam, students will take a short quiz on a weekly basis.

Grading will be as follows:

1. Class participation 10%
2. Work group homework and presentations: 25%
3. Quizzes: 35%
4. Final Exam: 30%

General Policies

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Syllabus

RM 705 Risk Transfer to Financial Markets

Professor:
Lecture Time and Location:
Office Hours and Location:
Email and Telephone:

Course Description and Objectives
Students will learn how derivatives are created and used for speculation, hedging and arbitrage. Most class time will focus on solving for equilibrium prices and learning price parity theorems of options and futures. These theorems and their assumptions make this course highly technical. Students will learn how to download and analyze data from the Bloomberg Terminal. Through virtual electronic trading students will get the chance to implement conceptual tools such as profit and loss diagrams, option trading strategies, binominal trees, option greeks, and the Black-Scholes formula. Students will learn how to minimize risk with futures through immunization, asset allocation, and duration matching.

Course Prerequisites
RM 701. RM 703, Analysis of Investment and Market Risk, is recommended but not required.

Required Text
Don Chance & Robert Brooks (5^{th}, 6^{th} or 7^{th} edition) *An Introduction to Derivatives and Risk Management*. South-Western Publishing (Thomson), 7E ISBN 0324321392.

Additional Required Readings
Students are expected to follow the markets on a daily basis by reading the *Wall Street Journal* or *Financial Times*. Students should be able to converse about current events in financial markets and their application to derivatives. Additional readings will be listed on

Blackboard. Please have your blackboard email forwarded to your regular email so that you get all announcements.

Required Materials

Data Analysis and Virtual Trading:

You will be required to open an account on Bloomberg and create an on-line portfolio of options and futures in OptionsXpress. Virtual trading assignments will also occur outside class time. This class does not in anyway advocate that students should trade securities online with real money for speculative purposes. Indeed what you will find is that speculation in derivatives is a great place to lose money, not make money. However, derivative markets also serve an important purpose in managing risk at some cost. Calculating the risk-return trade off and the menu of choices available to engineer this outcome is the primary goal of this course.

Computer and Calculator:

You will need access to a personal computer where you can download software and have access to Excel and the Internet. You will need to install the RIT client trading software found on Blackboard. You will also need a calculator. It is an advantage to have a financial calculator, but not a requirement. I recommend the HP 10B-II (costs about $30) or the TI BA-II Plus (costs about $30). You are expected to learn how to use this calculator on your own. Everyone should sign up for a Bloomberg account. This is professional data and trading software used by the financial industry. There is only one terminal and it is located in PH 300.

Online Tools:

Everyone should sign up for a virtual account on *OptionsXpress*. This is a trading website which you register online and it allows you to do virtual (paper) trading. This website is free and allows you to experience placing trades and managing a portfolio of equities, options and futures without the risk of monetary loss. A link is on Blackboard under "External Links" http://www.optionsxpress.com/welcome/tour/paper.aspx?nav=quick
Other tools used in class will also be available under "External Links" in Blackboard.

Blackboard:

The syllabus, lecture notes, assignments, grades, practice quizzes, links and announcements will be available on Blackboard: http://www.cuny.edu/.
Update your email for the class on Blackboard as soon as possible or forward your email from your Queens email to your regular email. Without the correct email you will not receive class email notices.

Pedagogical Approach

This class is difficult for most students; it requires good analytical skills and some mathematical problem solving. To do well most students must study regularly instead of waiting until the last minute to cram. Therefore, I have the following expectations of you:

- Read the assigned book material and PowerPoint slides before each lecture.
- Read the *Financial Times* daily, read at least 1 article that covers derivatives and risk management, 1 article that covers the financial climate, skim other parts of the paper daily. You can do this easily if you commute with public transport: on the

subway or bus, or while waiting.

- Work on the assigned practice quizzes on blackboard. First solve these without the answers.
- Work on the assigned homework questions – start early so that you can ask questions on how to solve these, in class or on the blackboard discussion board.
- Devote at least six hours a week outside of class for studying.
- See me as soon as you encounter difficulties.
- Be active in out of class trading scenarios.
- Have a positive attitude about learning and be respectful of others.
- Be on time for class and participate as much as possible.

Each class period includes required readings from the text book. Dates in the course outline are approximate and subject to change. Additional readings to the text book chapters are available on Blackboard.

Grading

The course grade will be based on 6 quizzes, 4 assignments, 3 exams (2 midterms and a final), and in and out of class participation (virtual trading). You will need to keep current with the *Financial Times* on topical events, read approximately one chapter per week and do practice quizzes in Blackboard which will help you with the in-class quizzes, the exams and the assignments.

*** Quizzes:**

There will be 6 quizzes of 5 to 7 questions lasting 15 minutes at the beginning of 6 classes. The content of the quiz will come from the text. Practice quizzes are on Blackboard under "Quizzes". The purpose of these quizzes is to keep students up to date with the material.

***Assignments:**

There are 4 individual assignments. Check Blackboard for the questions and the method of submission. Questions and submission dates will be added to Blackboard.

Assignment 1: Binomial option Pricing
Assignment 2: Part A -Using Bloomberg and Excel, Plot of a stock options volatility smile, Part B – Option Greeks
Assignment 3: Futures Trading on RIT
Assignment 4: Team Assignment using Peter Hoadley's Options Strategy Analysis Tools and OptionsXpress. Based on current events and your reading from the financial press take a position midway through the semester in OptionsXpress - based on your expectations for asset prices and volatility. Manage this speculative position with futures and options to minimize your risk and maximize your return. Present your portfolio at the end of the semester assessing your position.

***Examinations:**

There will be 3 exams during the semester including a cumulative final exam. The exam dates will be added to Blackboard. Practice exam questions are on Blackboard under Quizzes.

The weights are as follows

1. Attendance and class participation: 5%
2. 6 Quizzes: 10%
3. 4 Assignments: 25%
4. Mid Semester Exam 1: 20%
5. Mid Semester Exam 2: 20%
6. Final Exam: 20%

Class Schedule, Tentative

Class Meeting Date	Subject	Chapter Reading Assigned
Week 1	Introduction to options and futures. Option fundamentals; terminology; basic relationships; profit and loss diagrams.	2-3
Week 2	**Quiz I on Chapters 1-3 (beginning of 3)** Covered calls and protective puts, put-call parity	3
Week 3	Binomial Option Pricing	4
Week 4	**Quiz II on Chapters 3 & 4** Binomial option pricing	4
Week 5	**Assignment 1 due on Binomial Option Pricing** Intuition into Black-Scholes & Review for Midterm	4
Week 6	**First Mid-term Exam – Binomial Option Pricing** Volatility & Black-Scholes	1-4
Week 7	**Quiz III on Chapter 5 BS and volatility** Option Greeks	5
Week 8	**Assignment 2 due Estimating Volatility Using Bloomberg** Option strategies – Set up account in OptionsXpress	6-7
Week 9	**Quiz IV on Chapter 5 Option Greeks** Revision	5-7
Week 10	**Second Mid-term Exam – Black Scholes and Greeks** Basic Principles of Futures: hedgers, speculators & backwardation	5- 7
Week 11	**Assignment 3 electronic futures trading** Cash and Carry, fair value, and Contango markets **Quiz V on Option and futures Strategies Chapter 6-8**	8
Week 12	Stock index futures; FX Futures and hedging	9-10
Week 13	**Assignment 4 on Risk Reduction Strategies, in class presentation**	11
Week 14	**Quiz VI on Futures** **Revision**	
	Final Exam – Options and Futures	1-11

General Policies

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B) Policy for make-up exams: There are no make up exams.

C) Late submission of homework/case studies: Homework must be submitted both as a paper copy and electronically by the due date. Late assignments will not be graded.

D) Tardiness: Late arrival, while at times avoidable, is disruptive to your classmates and to the professor. Please make every effort to be on time.

E) Turn off all cell phones, PDAs, and computers when you enter the classroom.

F) Contacting me: My QC email address is the best way to reach me. Please state the course and your name in the subject line of the email. I will make all efforts to respond promptly. However, a last-minute email, call or visit on your part informing me of a late assignment, missed class, or inability to take an exam will not be acknowledged unless there is a true emergency that is documented. Please note that email correspondence reflects upon your ability to effectively communicate and upon your professionalism.

G) Plagiarism and cheating, therein, will automatically result in a zero grade *and* disciplinary action to its fullest extent, as prescribed by **CUNY's POLICY ON ACADEMIC INTEGRITY:** Academic Dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension, and expulsion as provided at: http://qcpages.qc.cuny.edu/provost/policies/index.html.

Syllabus

RM 706 Risk Transfer to Insurance Markets

Professor:
Lecture Time and Location:
Office Hours and Location:
Email and Telephone:

Course Description
This course examines risk transfer to insurance markets. Topics covered will include the variety of ways that risk transfer can occur including quota share and excess of loss agreements, catastrophe bonds, captives, reciprocals, segregated cells, and their structuring, such as retentions, limits, corridors, collateralization, reinstatement, and commutation provisions, and structured/financial insurance. Insurance products will be evaluated for their efficiency in risk transfer. How effective insurance markets are relative to capital markets will be evaluated in terms of terms and conditions, pricing, and basis risk.

Course Objectives
This course aims to expose students to the utilization of products traditionally purchased by the corporate risk manager for risk transfer and risk financing of traditional business

(operational) and insurance risks including asset and liability risks inherent in pension funds. This course is calculation intensive and students would be required to run basic insurance (operational) risk models, and be able to design optimal insurance-based hedges.

Course Prerequisites
Undergraduate degree in accounting or completion of graduate foundation coursework for M.S. in Risk Management or Accounting or permission of Risk Management program director. Recommended: RM 701.

Required Textbook and Readings:
1) *Introduction to Risk Management and Insurance*, by Mark Dorfman, 9th Edition, Pearson Education Inc., 2008. ISBN: 0-471-270873.

Articles and Instructors notes will be made available to enrolled students on Blackboard.

Pedagogical Approach
This class requires good analytical skills and some mathematical problem solving. To do well most students must come prepared to class, and to study regularly. Work on the assigned homework questions, and leave yourselves time before the due date to ask questions on how to solve these. Students are encouraged to work collaboratively with others outside of class, and will do best by devoting at least six hours a week outside of class for studying.

Expectations and Grading
Students are expected to attend each class and to work collaboratively in work groups.

Grading will be as follows:
- Class participation: 10%
- Group work presentations: 20%
- Midterm Exam: 35%
- Final Exam: 35%

1. Insurance and its legal doctrines: What constitutes insurance, insurability, pooling, and indemnity. Week 1.

2. Review of frequency, severity and other statistical properties of operational and insurance risks. Weeks 2 and 3.

3. Fundamentals of commercial insurance contracts. Week 4.

4. Structuring of risk transfer, including quota share, excess of loss, cat products, captives, reciprocals, segregated cells, securitizations and special-purpose vehicles, retentions, limits, corridors, collateralization, reinstatement, and commutation provisions. Structuring of financial (re) insurance. Weeks 5 – 7.

5. Calculation of the payoff structure, the measurement of efficiency, and calculating basis risk. Students will compare insurance and capital markets products in terms of terms and conditions, pricing, credit risk, and basis risk. Weeks 8-9.

6. Existing and proposed changes to GAAP and IFRS accounting treatment of risk retention and insurance risk transfer products. Weeks 10-11.

7. Regulation of the sale of insurance and reinsurance and tangencies with securities laws. Week 12.

8. The risk-management counterparty: Weeks 13-15.
    a. Insurer-based assessment, underwriting, pricing and capitalization of risks, and measuring returns on a risk adjusted basis.

    b. Risk management used by insurers e.g., dynamic financial analyses, use of limits, monitoring processes, re-insurance and retrocession, and capital-markets.

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F) Contacting me: My QC email address is the best way to reach me. Please state the course and your name in the subject line of the email. I will make all efforts to respond promptly. However, a last-minute email, call or visit on your part informing me of a late assignment, missed class, or inability to take an exam will not be acknowledged unless there is a true emergency that is documented. Please note that email correspondence reflects upon your ability to effectively communicate and upon your professionalism.

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of New York and is punishable by penalties, including failing grades, suspension, and expulsion as provided at: http://qcpages.qc.cuny.edu/provost/policies/index.html.

Syllabus
RM 707 Financial Statement Analysis

Professor:
Lecture Time and Location:
Office Hours and Location:
Email and Telephone:

Required Text
Financial Statement Analysis, Subramanyam and Wild 9th edition, ISBN 978-0-07-337943-2.
There will be additional readings assigned throughout the semester, principally annual reports of companies, which are available online at www.sec.gov/edgar or at the company's website.

Course Description
Analyses are made of financial statements of public companies from the perspective of investors, management, creditors, accountants and auditors. Financial statements and related disclosures will be analyzed to gain a perspective on a company's health. Business valuation models and techniques to develop forecasts and pro forma results will be discussed and illustrated. Ratio analysis and key performance indicators will be emphasized with a case study approach to this subject. Credit will not be given if ACC 350 or BUS 250 has been taken.

Course Prerequisites
RM 703 or Accounting 201 and 202.

Course Objectives
This course will explore the content of public financial data filed with the Securities and Exchange Commission and equip students with the tools they will need to extract relevant data to conclude as to the health of companies. Topics covered include in depth coverage of the annual report/10-k, proxy statement, registration statement (S-4), 8-K. After review of relevant SEC requirements, students will independently explore these documents and synthesize critical data needed for financial analysis.
Topics will include cash flow analysis, business valuation models, forecasting techniques, and interpretation of key data in annual reports such as management's discussion and analysis of results of operations, liquidity, market and credit risk measures, capital structures and footnote interpretation. In each of these areas, the student will gain experience in necessary adjustments to financial statements that must be made to reflect economic reality. We will use data coming from actual companies in learning how to recast financial results.

Teaching Philosophy and Pedagogical Approach

Students are assumed to have done the required readings in advance of class. Students should be prepared to be called on to respond to questions on the day's topic, and it's anticipated that students will draw differing conclusions from the same financial data and will be respectful of differing opinions. Students are required to bring their textbook, assigned readings and a calculator to every class.

Grading:

The following are the weightings that will be used in determining final grades. Each of these is discussed below.

Annual Report/Proxy Statement Interpretation Project	10%
Financial Analysis Team Project and Presentation	30%
Class work	20%
Case Studies from Text (4 for the semester)	20%
Final Exam	20%
Total	100%

Annual report/proxy statement interpretation project: Students will be asked to identify and then interpret key financial and risk management data contained in SEC filings, such as the annual report/form 10-K and proxy statement, Such data will include information on executive compensation plans, value at risk data, pension obligations (both on and off balance sheet), disclosure of derivative financial instruments, capitalized lease obligations and off balance sheet obligations. The student will be asked to research and correctly cite the relevant statutory or FASB requirements in their findings. Grading policy for this project will be: 0 for paper turned in late or not at all; 60 paper is on time, but without fully addressing one or more of the requirements.; 75-100—paper is turned in on time with well-articulated arguments that address all requirements. The highest grades will be awarded to those papers where the analysis is clearly explained and supported.

Financial Analysis Team Project and Presentation: Teams of 4 students will be asked to analyze financial information relating to 2 publicly held companies in the same industry, e.g. Coke vs. Pepsi; Dell vs. Apple ; CVS vs. Rite Aid; Home Depot vs. Lowes. There are two elements to this project. First there will be a written (typed) submission covering such areas as financial strength and liquidity, income statement analysis, competitive positioning, cash flow analysis, firm valuation as well as adjustments necessary to reflect economic reality. Students will be asked to conclude and support which company has the superior prospects in the next 12 months. The second part of the project will involve a class presentation in the form of an "investor presentation" to convince the class as to the appropriateness of the conclusions. The team will moderate a question and answer session after the presentations. Presentation dates will be posted in class. Half of your grade will depend on your individual contributions to the paper and class presentation. The other half of your grade will depend on the total team performance on the paper and class presentation. Numerical grades assigned will identical to as discussed in the above section on the annual report/proxy statement interpretation project.

Classwork: It is expected that students will have completed reading assignments and case studies before class. There are two ways in which the classwork requirement can be satisfied. Students must volunteer 4 times during the semester to present their conclusions

on the case studies, or, alternatively, to sign up as a "subject matter expert" on 4 different dates on the topic to be discussed that week. Students presenting case study conclusions must address and discuss critical points to receive full credit. Subject matter experts must make a reasonable attempt to respond to multiple questions raised by the professor on that day's topic to receive full credit.

Case Studies: Case studies constitute an integral part of the course, allowing students to apply what they have learned about analyzing financial statements in a real-world situation. Cases involve analysis of financial statements from actual. These will be assigned from the text in the following areas: a. analysis of pensions and employee benefits, b. analysis of inter-corporate investments, c. analyzing operating activities, prospective analysis and business valuation. Cases must be submitted in writing (maximum of 5 single spaced pages) and must address key theoretical concepts and their practical application to the facts in the case.

Final Exam: There will be a comprehensive cumulative final exam covering the entire semester work. It will be a combination of multiple choice, short answer and essay/case study questions. The essay/case study questions will be "take home" (distributed via Blackboard) and due on the last class before the final exam.

The following is the tentative class schedule, readings and assignments, all of which are subject to change. All chapter references are from the Subramanyam text.

Week 1	Syllabus/ Course Preview/Sources of Financial Information
	Chapter 1 Overview of Financial Statement Analysis
Week 2	How to read and interpret and annual report and proxy; fair value concepts
	Introduction to ratio analysis
	Chapter 2 Financial Reporting and Analysis
Week 3	Debt and Stockholders' Equity Analysis with emphasis on leases and pensions
	Chapter 3 Analyzing Financing Activities
	Case Study 3-2 Analyzing Pensions and Employee Benefits
Week 4	Investments in Debt and Equity Securities
	Chapter 4 Analyzing Investing Activities
	Annual Report and Proxy Statement Interpretation Project
Week 5	Analysis of Business Combinations and Consolidation Methods
	Chapter 5 Analyzing Investing Activities: Intercorporate Investments
	Case Study 5-2 Analyzing Tyco: Aggressive or out of line
Week 6	Income Statement and Comprehensive income analysis
	Chapter 6 Analyzing Operating Activities
	Case Study 6-4 Toys R Us Restructuring Activities
Week 7	Operating, investing and financing cash flows
	Chapter 7 Cash Flow Analysis
Week 8	Ratio analysis applied to income statement and return on equity
	Chapter 8 Return on Invested Capital and Profitability Analysis
Week 9	Forecasting and Projections of Financial Results
	Chapter 9 Prospective Analysis

	Case Study 9-1 Developing Projections for Kodak
Week 10	Credit and liquidity analysis; liquidity measures Chapter 10 Credit Analysis
Week 11	Business Valuation and Modeling Chapter 11 Equity Analysis and Valuation Case 11-2 Assessing Earnings Quality
Weeks 12-13	Financial Analysis Project Team Presentations
Week 14	Review for final exam
Week 15	Comprehensive Final exam---date, time and location to be determined by Queens College

General Policies

A Academic Dishonesty: CUNY policy on academic integrity can be found at http://qcpages.qc.cuny.edu/provost/policies/index.html.

These policies are supplemented below:

1. Penalties for cheating on either on the case studies or final examination can be from receiving no credit for the case or zero on the exam to up to failure for the course. Additional disciplinary action is also possible by Queens College.

2. Plagiarism---Work submitted must be your own. You must properly cite the sources used. If you do not, penalties may range from failure on the assignment to failure for the course. Additional disciplinary action is also possible by Queens College.

B Policy for Make-Up Examinations: There are no make-up exams given the same semester. If you fail to attend the final exam for a reason found acceptable to the professor, you will be given an grade of "incomplete" and one opportunity to complete the exam THE FOLLOWING SEMESTER at the same time that students from the subsequent class are complete it. The one exception to this policy will be when a student has a valid conflict for another final exam being given at the same time. In that instance a conflict exam will be administered at the time the Department schedules such exams.

C Policy for Late Submission of Case Studies: Case studies must be submitted in class on the date due. If you not attending class, you may email (in WORD) your case study to the professor at the qc email address at the school by the due date. Cases not submitted by the posted due date receive zero credit regardless of the circumstances.

D This class makes frequent use of Blackboard. Please regularly consult Blackboard for course announcements, additional reading assignments, handouts for you to bring to class and any changes to assignments.

E Arrival at class: Late arrival, while at times unavoidable, is disruptive to your classmates and the professor. Please make every effort to arrive on time.

F Please turn off cell phones, PDAs and pagers during class. If you need to be reached urgently, please set the phone to vibrate, answer quietly and leave the classroom for the remainder of the conversation.

G Student inquiries should be addressed to the qc email address above. Please state the course and meeting time in the subject line of your email. I will make every effort to

respond promptly to your inquiries. Please note that email correspondence reflects upon your ability to effectively communicate and upon your professionalism.

H If you are having difficulty with the course material or projects, you may see me, without appointment during my regularly scheduled office hours. If you are unable to see me during office hours, please contact me in person or by email so that we can arrange another mutually agreeable time.

ADA Statement

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Syllabus

RM 708 Financial Econometrics

Professor:
Lecture Time and Location:
Office Hours and Location:
Email and Telephone:

Course Description and Objectives

The course covers modern statistical and econometric techniques necessary for both professional and academic quantitative research in finance. Topics include: autoregressive and moving average models, Autoregressive Conditional Heteroskedasticity (ARCH) models, Generalized Autoregressive Conditional Heteroskedasticity (GARCH) models, analysis of high frequency intraday financial data. The course aims to teach students advanced methods of measuring and analyzing the risk of holding and trading financial assets.

Course Prerequisites

ECO 721 or equivalent; and RM 704 or MATH 241 or permission of the instructor.

Required Text

Tsay, Ruey S. *Analysis of Financial Time Series*, 2e, Wiley, 2005, ISBN: 0-471-69074-0.

Additional reference material

Brooks, C. *Introductory Econometrics for Finance*, Cambridge University Press, 2002. ISBN: 9780521793674. Selected chapters may be useful for a background introductory reading. This book is available in the college library on reserve.

Taylor, Stephen J. *Asset Price Dynamics, Volatility, and Prediction*, Princeton University Press, 2005, ISBN: 0691115370. This book is available in the college library on reserve.

Required Software

The software for this course is STATA (www.stata.com). Students may also use Eviews.

Pedagogical Approach and Assignments

The main aim of all assignments is to enhance your understanding of the material covered in class, as well as to enable you to apply the techniques in practice. You will be given a list of steps to follow in order to obtain answers to Assignment questions. Grades will depend on correctness, sufficient work shown and completeness. Each assignment will come with a separate page limit.

There will be three written computer based assignments, each worth 10% of your total mark. Assignment 1 will cover estimation and forecasting on the basis on ARMA models. Assignment 2 will ask you to estimate volatility models and forecast. You will be expected to choose the most appropriate model based on the criteria discussed in class. For the third assignment, there will be a choice of a project on Value at Risk or the high frequency data techniques.

The following presentation is required:

- Student's Name
- Numbered pages.
- The assignments need NOT be typed, but they must be legible.
- Problem answers must be numbered and written out in order with sufficient work shown.
- Results of different estimation attempts should be summarized in aggregate tables rather than appended without any explanation at the end of the project.

Grading

Active Class Participation	5%
Midterm	30%
3 Empirical Assignments	30%
Final (cumulative)	35%

The midterm will take place during class time. Both the Midterm and Final exams will be closed book, but you are allowed to bring a hand-written formula page and a calculator. Cell phones are not allowed during exams.

Tentative Course Outline—Subject to change

Week 1 Course Overview/ Returns in financial modeling.
Readings: Tsay-Chapter 1.1-1.2.

Week 2 Stylized characteristics of financial data.
Readings: Tsay-Chapter 1.3-1.4

Week 3	Random character of asset prices vs. predictability. Autoregressive models. *Readings:* Tsay-Chapter 2.1-2.4
Week 4	MA and ARMA models *Readings:* Tsay-Chapter 2.5-2.7
Week 5	Models for nonstationary and seasonal data. *Readings:* Tsay-Chapter 2.7-2.8.
Week 6	Predicting volatility. EWMA. ARCH models. *Readings:* Tsay-Chapter 3.1-3.4 **Assignment 1 due.**
Week 7	GARCH models and extensions *Readings:* Tsay-Chapter 3.3-3.5. 3.8, 3.9
Week 8	Evaluation of volatility forecasts. Volatility proxies. Diebold and Mariano test *Readings:* Tsay-Chapter 3.5. Handout. **Midterm 1.**
Week 9	Value at Risk estimation *Readings:* Tsay-Chapter 7.1-7.3
Week 10	Simulation methods. *Readings:* Brooks-Chapter 10.
Week 11	Econometrics of transaction level data *Readings:* Tsay-Chapter 5.1-5.3 **Assignment 2 due.**
Week 12	High frequency volatility. RV models. *Readings:* Tsay-Chapter 3.15. Handout.
Week 13	Modeling irregularly spaced data. ACD Models. *Readings:* Tsay-Chapter 5.5
Week 14	Modeling irregularly spaced data. Probit and decomposition models. *Readings:* Tsay-Chapter 5.4 **Assignment 3 due.**
Week 15	Final exam (cumulative)

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bring a letter to the instructor indicating the need for accommodation and what type. This should be done during the first week of class. For more information about services available to Queens students contact: Dr. Mirian Detres-Hickey, Special Services Office; 171 Kiely Hall; 718-997-5870 (8:00 a.m. to 5:00 p.m.). E-mail address: mdetres@yahoo.com or to mirian.detreshicky@qc.cuny.edu.

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Syllabus

RM 709 Portfolio Management

Professor:
Lecture Time and Location:
Office Hours and Location:
Email and Telephone:

Course Description
This course provides a detailed examination of portfolio management. The major topics treated are:

- Definition and measurement of risk;
- Market efficiency;
- Testing for inefficiencies;
- Mechanics of creating and managing a portfolio – bonds and equities;
- Hedging Strategies;

- Components and determinants of trading costs;
- Investment philosophies.

Course Objectives

The primary emphasis of the course is to provide a conceptual framework in which to view the portfolio management process. By the end of this course the student will be able to (1) understand and interpret major portfolio management concepts, (2) construct basic portfolios, and (3) apply portfolio management concepts to specific business problems. The student should also gain a better understanding of what drives risk and return.

Course Prerequisites

RM 703 or BUS 350.

Required Texts

Investment Analysis & Portfolio Management, 7th edition, Frank Reilly and Keith Brown, Thomson-Southwestern Pub. 2003, ISBN:0-324-17173-0
Analysis of Derivatives for the CFA Program, Don M. Chance,
Association for Investment Management and Research, 2003 ISBN:0-935015-93-0.
Chance's textbook is excellent preparation for the CFA. It contains a large set of problems, along with detailed solutions.

Supplementary reading material will be posted on BlackBoard.

Pedagogical Approach

This class requires good analytical skills and mathematical problem solving. Performing well requires regular studying throughout the semester and keeping on top of the material. You are expected to: Read the assigned material before each lecture; Start working on the assigned homework questions early so that you can ask questions on how to solve these if needed; Devote at least six hours a week outside of class for studying; Be on time for class and participate as much as possible.

Grading

Class Assignments: 20%

There are a total of 10 assignments. All assignments are due the week after they are assigned. No exceptions.

Mid-term: 30%

Project: 20 %

The project is a 5-7 page paper describing and evaluating the portfolio allocation and investment decisions associated with one of the following economic crises: 1987 Stock market crash; Orange County, CA. bankruptcy; 1998 Long Term Capital Management implosion; 2007-2008 Subprime crisis. The project is due on the last lecture date.

Final Exam: 30%.

Tentative Course Outline—Subject to Change

Lecture 1: Investment Background
Reading: Reilly and Brown (RB): Chapters 1 and 2.

Merton, Robert, "Thoughts on the Future: Theory and Practice in Investment Management", *Financial Analysts Journal*, January 2003
Assignment #1: RB Chapter 1, problems 5,6,7.

Lecture 2: Modern Portfolio Theory: Mean Variance Analysis
Reading : RB: Chapters 6 and 7.
William F. Sharpe, "Risk, Market Sensitivity, and Diversification", *Financial Analysts Journal, January-February 1995*.
Assignment #2: RB Chapter 7, Problems 3 & 4

Lecture 3: The Capital Asset Pricing Model
Reading: RB: Chapter 8;
French, K and Fama, E., "The CAPM, Theory and Evidence", *Journal of Economic Perspectives, Summer 2004.*
Assignment #3: Harvard Business School Case 9-292-122: "Beta Management Company." Estimate "beta" for Brown Group, Inc. and California REIT.

Lecture 4: The Arbitrage Pricing Theory
Reading: RB: Chapter 9;
Black, Fischer, "Estimating Expected Return," *Financial Analysts Journal, January 1995*.
Assignment #4: RB Chapter 9, problems 6 and 7.

Lecture 5: Market Inefficiencies
Reading: Rubenstein, Mark, "Rational Markets: Yes or No? The Affirmative Case", *Financial Analysts Journal, April 2001*.
Haug, Mark and Hirschet, Mark, "The January Effect", *Financial Analysts Journal, Sept. 2006*, Vol. 62, No. 5:63-75.
Jagadeesh, N. & Titman, S., "Returns to Buying Winners and Selling Losers", *The Journal of Finance,* Mar. 1993.
Malkiel, Burton, "The Efficient Market Hypothesis and its Critics", *Journal of Economic Perspectives, Winter 2003*, Harvard Business Case Study: Beta Management.
Rathinasamy, R. and Mantripragada, K., "The January Size Effect Revisited: Is It a Case of Risk Mis-measurement?" *Journal of Finance and Strategic Decisions*. Fall 1996.

Lecture 6: The Analysis and Valuation of Bonds
Reading: RB Chapter 19.
Harvard Business School Case 9-205-008: "Note on Bond Valuation and Returns".
Assignment #5: RB Chapter 19, problems 1,2,3.

Lecture 7: Bond Portfolio Management Strategies
Reading: RB Chapter 20**,**
Assignment #6: RB Chapter 20, Problems 1,2,3,4,5.

Lecture 8: Forwards & Futures – Pricing and Valuation
Reading: Chance: Chapters 2 and 3.
Harvard Business School Case 9-205-118: "Note on Forwards and Swaps".
Chance practice problem #2, Chapter 3.

Assignment #7: HBS Case Study, problems 1,2,3.

Lecture 9: Hedging Strategies using Futures
Reading: RB Chapter 22; Chance Chapter 6.
Harvard Business School Case 9-294-061, "Leland O'Brien Associates Incorporated: Portfolio Insurance".
Chance practice problems, #6 and 7, Chapter 6.
Assignment #8: RB Chapter 22, problems 1,2.

Lecture 10: Swap Markets and Contracts
Reading: Chance, Chapter 5, RB Chapter 24.
Chance practice problems, #3 and 4, Chapter 5.
Assignment #9: RB Chapter 24, problems 1,2.

Lecture 11: Swaps and Hedging Strategies
Reading: Chance, Chapter 8.
Chance practice problem #4.
Chicago Board of Trade, "Hedging a Fixed-Income Portfolio with Swap Futures", CBOT Strategy Paper.
Assignment #10: RB Chapter 24, problems 3,4.

Lecture #12: Asset Allocation and Performance Measurement
Reading: RB Chapter 26.
Padgette, Robert, "Performance reporting: The Basics and Beyond, Parts I and II", *Journal of Financial Planning*.
Sharpe, William. "Asset Allocation: Management Style and Performance Measurement ", *The Journal of Portfolio Management*, Winter 1992.
Sharpe, William, "The Sharpe Ratio", *The Journal of Portfolio Management*, Fall 1994.

Lecture #13: Transactions Costs
Reading: Cheng, Minder, "Pre-trade Cost Analysis and Management of Implementation Shortfall", *AIMR* 2003.

Lecture #14: Professional Asset Management
Reading: RB Chapter 25.
Harvard Business School Case 9-204-055, "Yale University Investments Office: June 2003"
Madhavan, Ananth, "Implementation of Hedge Fund Strategies", *Hedge Fund Strategies A Global Outlook, Fall 2002.*

General Policies
A) ADA: Students with disabilities needing academic accommodation should: (1) register with and provide documentation to the Special Services Office, Kiely 171; (2) bring a letter to the instructor indicating the need for accommodation and what type. This should be done during the first week of class. For more information about services available to Queens students contact: Dr. Mirian Detres-Hickey, Special Services Office; 171 Kiely Hall; 718-997-5870 (8:00 a.m. to 5:00 p.m.). E-mail address: mdetres@yahoo.com or to mirian.detreshicky@qc.cuny.edu.

B) Policy for make-up exams: There are no make up exams given.

C) Late submission of homework/case studies: Homework must be submitted both as a paper copy and electronically by the due date. Late assignments will not be graded.

D) Tardiness: Late arrival, while at times avoidable, is disruptive to your classmates and to the professor. Please make every effort to be on time.

E) Turn off all cell phones, PDAs, and computers when you enter the classroom.

F) Contacting me: My QC email address is the best way to reach me. Please state the course and your name in the subject line of the email. I will make all efforts to respond promptly. However, a last-minute email, call or visit on your part informing me of a late assignment, missed class, or inability to take an exam will not be acknowledged unless there is a true emergency that is documented. Please note that email correspondence reflects upon your ability to effectively communicate and upon your professionalism.

G) Plagiarism and cheating, therein, will automatically result in a zero grade *and* disciplinary action to its fullest extent, as prescribed by **CUNY's POLICY ON ACADEMIC INTEGRITY:** Academic Dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension, and expulsion as provided at: http://qcpages.qc.cuny.edu/provost/policies/index.html.

Syllabus

RM 710 Fixed Income

Professor:
Lecture Time and Location:
Office Hours and Location:
Email and Telephone:

Course Description

The course exposes students to an in-depth analysis of the concepts encountered in the market for fixed income securities. The student will develop tools to price bond and money market instruments, understand the term structure of interest rates, analyze the Treasury yield curve, and evaluate credit yield spreads. The course illustrates hedging and other trading and portfolio strategies, and explores fixed income derivative instruments.

Course Objectives

The primary objective of the course is for students to understand the fixed income markets, and to understand the math, mechanics, and pricing of fixed income instruments. Students should be able to converse about current events especially in regard to US government monetary and fiscal policy, should be able to compare and derive yield spreads and yield curves, and forward rates.

Course Prerequisites
ECO602 or BUS241; MATH131 is recommended.

Required Text:

Fixed Income Analysis (CFA Institute Investment Series) (2007) 2nd Edition, by Frank J. Fabozzi. ISBN 047005221X.

Additional Readings
Students are expected to follow the markets on a daily basis by reading the *Financial Times* and or *The Wall Street Journal*. From time to time there will be other suggested reading material to supplement the textbook, available in Blackboard.

Blackboard:
Check Blackboard regularly by logging onto Blackboard through the CUNY portal. http://www.cuny.edu. The syllabus, course documents, lecture notes, important announcements, your assignment questions, practice quizzes, and grades will be posted on the Blackboard website. You are responsible for checking Blackboard for information. For questions on the homework assignment or quiz questions you may make use of the "Discussion Board."

Course Requirements:

Pedagogy and Assignments
There will be 2 assignments, the first is on the term structure of interest rates and you will plot 3 *T-bond yield curves* taking data from the Bloomberg terminal in PH300. The second assignment is on *yield spreads* which compares the interest rates paid by different issuers, also from the Bloomberg terminal. Both these topics are commonly talked about in the *Financial Times* and *Wall Street Journal* and you should clip articles that might be relevant during the semester and include them in your report.

Examples of assignments are given below. Each assignment requires the collection and assessment of financial data. Your report should be double spaced and 5 – 7 pages long. Each assignment should use proper citation methods. While students can join together in teams to talk about the assignment and the manner in which they should collect or analyze the data using Excel, the final written product should be each student's own composition. Plagiarism from either external sources or other Queens College students will lead to a failing grade in this component (see note regarding CUNY's policy on academic dishonesty below). Each final assignment must be both submitted via the digital drop box in Blackboard and as a printed hard copy handed to the Professor in class. A signed statement (available from Blackboard) admitting no plagiarism must be attached to the front of the hard copy of each assignment. Points will be deducted for lateness.

Grading
The course grade will be based on 6 components. The assessment weights are as follows:

1. Attendance and Class Participation: 5%
2. 5 quizzes (best 4 included in the score): 20%
3. Assignment 1 (Report on T-bond Yield Curve): 15%
4. Assignment 2 (Report on Credit Yield Spreads): 15%
5. Midterm Exam: 20%
6. Final Exam on the entire course: 25%

Quizzes:
There are 5 quizzes, 15 minutes each, taken at the beginning of class. The content of the quiz will primarily come from the text and articles from the previous weeks' *FT* or *WSJ* which I will nominate a few days prior to the quiz on Blackboard. Each quiz consists of approximately 10 questions: true or false, multiple choice and short answers. Read and summarize the relevant chapter(s) in the text, and understand the FT articles, in order to have the information needed to answer the quizzes.

Final Examination:
The final exam is cumulative and will consist of multiple choice, and short and long answer questions. It will be similar to the in-class quiz questions, and the practice quiz questions in Blackboard. Long answer exam questions will be based on the assignments and topics emphasized in class. The best preparation for the exam is to read and summarize the text chapters, take notes during class and practice quiz questions on Blackboard.

Tentative Course Outline—Subject to change

Class Meeting Date	Subject	Chapter Reading
Week 1	Time Value of Money, Bond Pricing, Overview of Instruments	1,5
Week 2	Risks Associated with Fixed Income	2,3
Week 3	**Quiz 1 on Chapters 1- 3** Determinants of Interest Rates	4
Week 4	Credit Analysis and the Determinants of Interest Rates Start collecting of T-bond yields for assignment 1	4,8
Week 5	Central Banking and Monetary Policy **Quiz 2 on Chapters 4-5**	8, Additional Notes
Week 6	Yield Curve Analysis, Spot and Forward Rates	6,8
Week 7	Prices, Volatility, Duration, and Convexity **Quiz 3 on Monetary Policy Chapters 6,8**	7
Week 8	Valuing Bonds with Embedded Options, Review ***Submit Assignment 1*** Start collecting of Credit yield spreads for assignment 2	9
Week 9	**Midterm Exam 1-7** Asset Backed Securities	10,11
Week 10	**Quiz 4 on Asset Backed Securities** Derivatives	13
Week 11	Interest Rate Swaps, Credit default swaps	14
Week 12	**Quiz 5 on Derivatives** Global Financial Crisis (2007-2009)	15, Additional Notes
Week 13	Global Financial Crisis and fixed income securities (CDOs, MBS, CDS) ***Submit Assignment 2***	
Week 14	Exam Review	
Cumulative Final Exam		

Assignment Examples

Assignment 1

Given T-bond prices and yields as published by the *Wall Street Journal*, obtain three US Treasury Yield Curves for three dates that will be assigned during class and another date during the semester of your choosing - please choose a date different from your friend's!).

What are the theories underlying the term structure of interest rates? Compare the three different curves in terms of interest rate **levels**, **slope** and **curvature**. Use theory and a description of the economic outlook during each of these periods in your comparison (e.g. expectations about economic growth, inflation and monetary policy).

Plot the 6 month futures yield curve. Why is it different from today?

Assignment 2
For the same maturity, compare yields on *US Treasuries* along with three other groups of **domestic** debt issuers: these could be indexes for *state and local government*, *corporate*, or *bank* issuers, or single issues for all three categories. Make your selection using Bloomberg with the goal of having a compatible term to maturity between issuers (e.g. all three security issues should have the same yield to maturity for either a 6 month, 10 year, 20 year or 30 year term). Plot a time series for the 4 issuers market *yields* on the same graph from 1989 until now. In a second graph plot a time series of the *credit yield spread* on the Treasury security for each of the other **three** issuers over the same time period (for example, corporate yield minus Treasury yield and municipal yield minus Treasury yield). Now plot the same graph but from January 2007 until now.

Write up your answers to the following questions:

1. What does the *quality yield spread* between different issuers signify? Explain with reference to the issuers.

2. Does the *yield spread* change over time? Why or Why not?
Use historical and current economic events to explain why this spread has increased or narrowed over time. Pay particular attention to the most recent period.

Combine both graphs and writing into a report. Use proper citation and a list of reference at the end of the document.

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Syllabus

RM 790 Applied Dynamic Financial Analysis

Professor:
Lecture Time and Location:
Lab Time and Location:
Office Hours and Location:
Email and Telephone:

Course Description:
This is the capstone course for the Risk Management program, in which students will run a dynamic financial analysis for a corporation, modeling its financial asset and liability exposures, and estimating future cash flow, time-varying exposures, and covariance across exposures. Students will build models with applications either to pension funds, life insurance, non-life insurance, banking, and treasury/funding operations.

Course Objectives
The Capstone course aims to bring together all facets of the risk management curriculum by having the student run a dynamic financial analysis ("DFA") simulation model for a particular organization. Students will gain hands-on modeling experience that they will be able to use in a real-world, risk management environment.

Course Prerequisites
RM 701, RM 702, RM 705, and either RM 703 or RM 704. This course may be taken concurrently with RM 703 or RM 704 with permission of the program director.

Required Readings:

1) *Managing Financial Risk: A Guide to Derivative Products, Financial Engineering, and Value Maximization, 3rd. Ed.*, by Charles W. Smithson, McGraw Hill, 1998, ISBN 0-07-059-354.

2) *Financial Risk Manager Handbook*, by Philippe Jorion, John Wiley & Sons, 2007, ISBN: 978-0-470-12630-1.

Additional readings are required as they pertain to the corporation being modeled, its industry and overall competitive landscape and will be assigned throughout the semester. Students will be required to identify and source the documents and data that they will require for their analyses.

Pedagogical Approach

Using customized, proprietary commercial software, students will build and run a DFA model for a corporation, hedge fund, or financial institution, using an agreed upon set of available data. The DFA model is an asset-liability management ("ALM") model in which an organization's asset and liability values are forecasted over time and simulated by allowing economic, financial, and other business drivers of the cash flows to vary stochastically, in a dynamic and simultaneous fashion, using Monte Carlo and other simulation methods.

This course will be model-building intensive. Students are expected to work collaborative together to assist each other in a work-group environment. Teams will be selected so that each team has a diversified skill-set. The class will meet in a computer lab.

The student will:

- Set up the baseline model, inputting relevant financial data for the company, data and statistical properties for the industry, and other data and statistical properties of relevant macro variables;
- Use the baseline to determine the organization's valuation;
- Use the baseline to produce financial statements;
- Perform stress tests on the baseline;
- Over-lay the baseline with hedges and other risk mitigating techniques;
- Perform stochastic simulations;
- Describe the risk profile of the company based on the results from above; and
- Recommend risk mitigation strategies to optimize the value of the company

Expectations and Grading

Students are expected to attend each class and to actively participate and assist each other on their teams. The course will be communication intensive, and students will make three presentations to the class over the course of the semester.

1st Presentation: Week 4.

Identify the organization and its risk exposures, characterize the risk exposures; express the organization's ownership, governance, reward system, risk tolerance and mitigation objectives; express the organization's strategic objectives; discuss the most appropriate risk measurement framework to use. Prioritize risk measurement and mitigation objectives and discuss the proper allocation of resources and time for these objectives;

discuss areas for internal mitigation and areas for which risk transfer is the most appropriate mitigation strategy. Discuss the choice of model to be used and the outputs of the model that will be relevant.

2nd Presentation: Week 9.
Discuss the preliminary findings of having used the DFA model; discuss how model risk has been tested for; discuss stress test findings and preliminary results. Discuss whether the results are intuitive and sensible.

3rd Presentation: Week 15.
Discuss the final findings of the model; present scenario analysis and stress test results in real time; discuss pre and post mitigation risk profile of the organization; present a mock Board presentation.

Grading will be as follows:

Class participation and team work: 10%
1st Presentation: 30%
2nd Presentation: 30%
3rd Presentation: 30%

General Policies

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B) Policy for missed presentation: There is no make up given--no exceptions.

C) Late submission of homework/case studies: Homework must be submitted both as a paper copy and electronically by the due date. Late assignments will not be graded.

D) Tardiness: Late arrival, while at times avoidable, is disruptive to your classmates and to the professor. Please make every effort to be on time.

E) Turn off all cell phones, PDAs, and computers when you enter the classroom.

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Syllabus

RM 791 Dynamic Financial Analysis Model Building

Professor:
Lecture Time and Location:
Lab Time and Location:
Office Hours and Location:
Email and Telephone:

Course Description
In this course, students will contribute to the building and development of Dynamic Financial Analysis (DFA) models tailored to a financial institution, non-financial corporation, or pension fund. The DFA model is an asset-liability management model in which an organization's asset and liability values are forecasted over time and simulated by allowing economic, financial, and other business drivers of the cash flows to vary stochastically, in a dynamic and simultaneous fashion, using Monte Carlo and other simulation methods. The course is open to students only by invitation of the Program Director.

Course Prerequisites
RM 790.

Topics
The course will have students contribute to the building and development of a commercial, proprietary Dynamic Financial Analysis (DFA) model tailored to a financial institution, non-financial corporation, or pension fund. The course is open to students only by permission of the Program Director.

The DFA model is an asset-liability management ("ALM") model in which an organization's asset and liability values are forecasted over time and simulated by allowing economic, financial, and other business drivers of the cash flows to vary stochastically, in a dynamic and simultaneous fashion, using Monte Carlo and other simulation methods.

The student will be expected to contribute to one or more facets of a model under development. Contributions will be expected from a student's area of specialization within the risk management program, e.g., finance, mathematics/actuarial science, economics, econometrics, accounting or computer science. Examples of contributions are:

- Testing the efficiency of a hedge designed to mitigate a particular risk (finance student);
- Design of the financial reporting module under US GAAP (accounting student);
- Modeling the price of particular financial assets (finance student);
- Modeling the behavior of particular liabilities (actuarial/math student);
- Designing the algorithms to capture correlations across variables (computer science student);

Pedagogical Approach

The student's work, under the direction of a risk management faculty member, will be largely independent and will consist of assisting a leading financial modeling software company to further develop or enhance an aspect of its commercial DFA software.

Expectations and Grading

This course will be model-building intensive. Each student will have a customized assignment for the semester that will be determined in consultation with the student before the semester begins and documented. Students are expected to work collaboratively with other students and faculty and a high caliber work product is expected from each student, having a quality level suitable for commercial applications.

Grading

Grades will be determined by:
Quality of the student's work product: 50%;
Timeliness of the student's work product 30%, and
Contribution to the overall class project including providing assistance to classmates (20%).

General Policies

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B) Policy for a missed assignment: There is no make up given--no exceptions.

C) Late submission of assignment: Your grade is largely determined by the timeliness of the work product. Managing your time is a component of the work product. If you believe that a deadline is likely to be missed, please provide as much notice as possible to potentially mitigate the impact on your grade.

D) Tardiness: Late arrival, while at times avoidable, is disruptive to your classmates and to the professor. Please make every effort to be on time.

E) Turn off all cell phones, PDAs, and computers during class time.

F) Contacting me: My QC email address is the best way to reach me. I will make all efforts to respond promptly. However, a last-minute email, call or visit on your part informing me of a late assignment, missed class, or inability to take an exam will not be acknowledged unless there is a true emergency that is documented. Please note that email correspondence reflects upon your ability to effectively communicate and upon your professionalism.

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Syllabus

RM 792 Special Topics in Risk Management

Professor:
Lecture Time and Location:
Office Hours and Location:
Email and Telephone:

Course Description and Objectives:
This course will be a seminar in risk management covering a special topic as it relates to risk management, such as corporate governance, behavioral finance, or corporate strategy.
The specific course objectives are dependent upon the semester's chosen topic.

Course Prerequisites
Prerequisites: Pre-requisites or co-requisites will vary with the particular topic, or with permission of the program director.

Topics
The topic will vary based on the expertise of the faculty and guest lecturers and topical relevance. Topics may include:

- Governance
- Behavioral Finance
- Corporate Strategy

Readings:

Readings as they pertain to the Special Topic.

Expectations and Grading
As they pertain to the Special Topic and instructor's requirements.

General Policies
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B) Policy for missed presentation: There is no make up given--no exceptions.

C) Late submission of assignments may materially affect your grade.

D) Tardiness: Late arrival to a class, lab or work group meeting, while at times avoidable, is disruptive. Please make every effort to be on time.

E) Turn off all cell phones, PDAs, and computers when you enter the classroom and lab.

F) Contacting me: My QC email address is the best way to reach me. Please state the course and your name in the subject line of the email. I will make all efforts to respond promptly. However, a last-minute email, call or visit on your part informing me of a late assignment, or missed class or lab, will not be acknowledged unless there is a true emergency that is documented. Please note that email correspondence reflects upon your ability to effectively communicate and upon your professionalism.
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Syllabus

CSCI 765 Computational Finance

Course Description
Valuation of financial derivatives is presented as a family of algorithmic computations, centering on understanding and implementation of about fifty selected algorithms. Concepts include time value of money; market risk and credit risk; arbitrage; forwards and futures on stock, currencies, interest-rates, indices, commodities; collateral, marking-to-market, margining, netting; fundamentals of capital asset pricing; yield curves, bond prices, forward rates; swaps; options, claim synthesis; binomial trees; Weiner processes, Itô's Lemma, Black-Scholes-Merton model for options; Greeks; implied volatility and

term structure; credit risk, estimates of credit default probabilities, credit default spreads and default intensities; introduction to some path dependent and exotic derivatives.

Course Objectives
Ability to independently implement the pricing of most widely used derivative contracts, including formulation of input-output algorithm specification, efficiency analysis (time and other resources), coding practice, and analysis of assumptions and restrictions imposed by models or forced by data sources. Students should have the ability to extend concepts and components of these basic algorithms to the valuation of more complex derivative contracts.

Course Prerequisites
CSCI 313 and Math 241; or CSCI 314 and Econ 249 for Finance students.

Required Texts
1. *Options, Futures, and Other Derivatives, 7th Edition* by John. C. Hull. Prentice Hall, 2009, ISBN-13: 9780136102953.
2. J. C. Hull: *Options, Futures and Other Derivatives,Student Solutions Manual,* Prentice-Hall, 2008, ISBN 978-0-13-601589-5 or 0-13-601589-1.

Other Required Materials
Lab manual: *Computational Finance*, *synopsis, algorithm catalog, problems,* by the instructor.

Tentative Course Outline—Subject to Change

Week 1	Chapter 1,2	Introduction to derivative trading, arbitrage; Futures, marking to market, margining
Week 2	Chapter 3,4	Index futures, hedging; Interest rates and conversion; bonds and forward rate agreements; bootstrapping yield curve from bond prices
Week 3	Chapter 5	Forward contracts: investment assets with known dividend income or yield, indices, currencies, commodities
Week 4	Chapter 6	Conversion factors and cost-to-deliver for Treasury bonds; clean and dirty prices of bonds and bond futures
Week 5	Chapter 7	Fixed-float interest-rate swaps and fixed-fixed currency swaps; bootstrapping yield curve from swap rates
Week 6	Chapter 8,9,10	European and American options; put-call parity; Combining options and stock: call, put, bull, bear, box, butterfly, calendar, straddle, strangle, …
Week 7	Chapter 11,16,19	Binomial tree for pricing American (and European) put and call on stock, index, currency, futures
Week 8	Chapter 12	Generalized Weiner Process
Week 9	Chapter 12,13	Analytical derivation of a stochastic process for a claim on log-normal stock via Itô's Lemma;
Week 10	Chapter 13,15,16	Black-Scholes-Merton price of European put and call on stock, index, currency, futures; American call on stock,

		Black's approximation
Week 11	Chapter 17,18	Greeks, implied volatility, volatility smiles and term structure
Week 12	Chapter 22	Credit risk; default probability from corporate bond prices and from equity price (Merton's model)
Week 13	Chapter 23	CDS spread from default intensity prices and recovery ratio; MTM of CDS; implied default intensity from CDS spreads; convertible bond via binomial tree
Week 14	Chapter 24	Exotic options
Week 15		Final exam

Requirements:
There are three mid-term in-class problem-solving exams, and the final exam (all "cumulative.") Exams are solved with open books and notes; they are administered in a computer lab, and Excel or an equivalent software tool is employed to implement the required calculation and to run small instances of valuation algorithms on the exams.

Final-grade rule:
First mid-term: 10%
Second mid-term: 20%
Third mid-term: 30%
Final: 40%

General Policies
A) ADA: Students with disabilities needing academic accommodation should: (1) register with and provide documentation to the Special Services Office, Kiely 171; (2) bring a letter to the instructor indicating the need for accommodation and what type. This should be done during the first week of class. For more information about services available to Queens students contact: Dr. Mirian Detres-Hickey, Special Services Office; 171 Kiely Hall; 718-997-5870 (8:00 a.m. to 5:00 p.m.). E-mail address: mdetres@yahoo.com or to mirian.detreshicky@qc.cuny.edu.

B) Policy for missed exam: There are no makes-up given.

C) Two aspects of missed exam leniency apply:

- Any normalized score is automatically substituted by the one earned on the following exam if the substitution is favorable, thereby providing an automatic make-up opportunity for all students on each midterm exam;
- Extra credit is offered on each exam, and outstanding performance

D) Tardiness: Late arrival, while at times avoidable, is disruptive to your classmates and to the professor. Please make every effort to be on time.

E) Turn off all cell phones, PDAs, and computers when you enter the classroom.

F) Contacting me: My QC email address is the best way to reach me. Please state the course and your name in the subject line of the email. I will make all efforts to respond promptly. Please note that your grade reflects your ability to effectively communicate. If your electronic or in-person communications with me are unprofessional, this will have a negative impact on your grade.

G) Plagiarism and cheating, therein, will automatically result in a zero grade *and* disciplinary action to its fullest extent, as prescribed by **CUNY's POLICY ON ACADEMIC INTEGRITY:** Academic Dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension, and expulsion as provided at: http://qcpages.qc.cuny.edu/provost/policies/index.html.

APPENDIX E
PROGRAM REQUIREMENTS

Program Content and Requirement		**Please place an X in the appropriate column**		
	Course Number and Title	**Number of Credits**	**Is this a new course?**	**Is this a revised course?**
List each course required for the college core (if applicable)	n/a			
List each course required for the major (include any field experience, research, thesis or capstone course	RM 701: Enterprise Risk Management	3	x	
	RM 702: Accounting for Risk Management	3	x	
	RM 704: Risk Measurement	3	x	
	RM 705: Risk Transfer to Financial Markets	3	x	
	RM 706: Risk Transfer to Insurance Markets	3	x	
	RM 790: Applied Dynamic Financial Analysis (capstone)	3	x	
	Note: the following courses (total of 15 credits must be taken by all students before enrolling in the required courses above, unless they are waived by the program director for those students who have taken equivalent courses as part of their undergraduate program: ECO 601: Introduction to Micro and Macro Economics ECO 602: Introduction to Corporate Finance and Money and Banking ECO 649: Statistics as Applied to Economics and Business ACCT 600: Financial Accounting Theory and Practice-Part 1	15		
	Note: students wishing to enter the Accounting/CPA concentration must complete the following additional foundation courses (total of 26 credits). Students with an undergraduate degree in Accounting or who have taken the appropriate undergraduate courses may be exempt from some or all these additional graduate foundation courses.	26		

	ACC 601 Financial Accounting Theory and Practice-Part 2 ACC 602 Financial Accounting Theory and Practice-Part 3 ACC 603 Concepts of Managerial Accounting ACC 604 Concepts of Auditing and Computer Auditing ACC 605 Introduction to Business Law ACC 606 Federal and New York State Taxes on Income CSCI 688 Advanced Productivity Tools for Business			
	Note: students in the Accounting/CPA concentration must take the following courses (total of 15 credits) ACC 712 Advanced Financial Accounting Theory ACC 723 Advanced Auditing Theory and Practice ACC 747 Communications and Accountants ACC 752 Business Law ACC 757 Taxation of Business Entities	15		x
	Note: the following courses are required of all students in the Finance/CFA concentration (total of 12 credits) RM 707 Financial Statement Analysis RM 708 Financial Econometrics RM 709 Portfolio Management RM 710 Fixed Income Instruments	12	x	
	Note: students in the Finance/CFA concentration must choose one of the following courses (3 credits)	3		
	Note: students in the DFA Modeling concentration must take the following courses (total of 12 credits) ECO 715 Advanced Corporate Finance RM 703 Analysis of Investment and Market Risk CSCI 765 Computational Finance RM 791 Dynamic Financial Analysis Modeling	12	x (except 715)	
	Note: students in the DFA Modeling concentration must choose one of the	3	X (except	

	following courses (3 credits) RM 709 Financial Econometrics RM 792 Special Topics in Risk Management CSCI 780 Special Topics in Computer Science		780)	