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Baruch College
The City University of New York

Proposal to Establish a Program in Financial Risk Management
Leading to the Master of Science Degree

Effective Fall 2013

Sponsored by the Bert W. Wasserman Department of Economics and Finance
Zicklin School of Business

Baruch College Governance

Letter of Intent Approvals
The Executive Committee of the Bert W. Wasserman
Department of Economics and Finance, April 6, 2011
The Zicklin Graduate Curriculum Committee, May 13, 2011
The Zicklin Faculty, May 19, 2011
CUNY, November 2, 2011

Program Proposal Approvals
The Graduate Curriculum Committee of the Zicklin School, April 20, 2012
The Zicklin Faculty, April 26, 2012
The Graduate Advisory Committee, May 18, 2012

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Proposal Abstract

Baruch College proposes a new degree program: the Master of Science in Financial Risk Management. Following the recent financial crises, financial risk management is an area of significant and growing interest in the finance industry, especially in New York City. However, at this time there are few opportunities for practicing finance professionals to extend their formal education in this area, or for professionals in related fields like information technology to enter this field.

This graduate degree program will provide students with comprehensive, foundational knowledge of modern risk management. Students who complete this degree will be well positioned to accept financial risk management responsibilities and implement effective financial risk management programs in their firms. They will be able to identify and develop appropriate risk management strategies as new challenges, opportunities, and needs arise in the future. Finally, this degree program will be designed so that students have the academic background needed for the professional certification tests of the Global Association of Risk Professionals (GARP), the leading professional financial risk management association.

Several factors support the establishment of the proposed MS in Financial Risk Management. These include the expertise of Baruch’s current faculty members in this area, the interest of prospective students in the proposed program, and the limited number of graduate-level degree programs in financial risk management in New York City. This program is highly appropriate to Baruch College’s mission, which says in part that the College’s graduate programs focus on professional preparation that enables students to become leaders and innovators in their fields. It also supports the mission of the Zicklin School of Business, which includes goals of maintaining a curriculum that is innovative and responsive to the needs of global business.
Proposal to Establish a Program in Financial Risk Management
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1. Purposes and Goals

The MS in Financial Risk Management is a graduate degree program that will provide students with comprehensive, foundational knowledge of modern financial risk management. This foundation includes principles and processes of systems, models, and practices that are actively used in financial and non-financial firms. A brief outline of the courses in the program is in Appendix A. Students who complete this degree will be well positioned to accept financial risk management responsibilities and implement effective risk management programs in their firms. Further, they will be able to identify and develop appropriate risk management strategies as new challenges, opportunities, and needs arise in the future.

Several factors strongly support the establishment of the proposed MS in Financial Risk Management. These include the expertise of Baruch’s current faculty members in this area, the interest of prospective students in the proposed program, and the small number of existing graduate-level degree programs in risk management in New York City.

This degree program covers the materials that form the basis of professional certifications in financial risk management, including the Financial Risk Manager (FRM) designation of the Global Association of Risk Professionals (GARP), the leading professional association in this area. Although students will master the knowledge required for the certification examinations, the MS in Financial Risk Management provides a thorough academic foundation and should not be viewed primarily as exam preparation. Indeed, the MS program places greater emphasis on the principles that govern risk management than is characteristic of a professional certification. Moreover, the MS program provides students with classroom cases and challenges that involve using and applying the models in real-life business situations that extend beyond the basic knowledge required in the certification tests.

National and local educational trends. Interest in financial risk management education is vibrant and growing. For example, University of Connecticut (UCONN) has a similar degree program at its branch in Stamford, CT. Its inaugural class entered in the Fall 2010 semester, and UCONN is already expanding it to their Greater Hartford campus for the Fall 2012 semester.

Growth of interest in this area is also evidenced by registrations for GARP’s FRM examination: the number of registrants in 2011 was 26,527, compared to 23,324 in 2010. The first time this examination was offered was in the year 2001, when the number of registrants was 2,958. This represents an expansion by a factor of ten since 2001.

Growth is expected to remain strong in the near future. CNN Money website and PayScale.com have developed a list of the 100 top careers that have both high pay and excellent growth prospects for 2010. Risk management’s rank was number 14 in this list. Moreover, CNN and PayScale forecast that employment in this field will grow at an average annual rate of 24% a year in the next decade.
Faculty expertise and commitment. Most of the courses in the proposed program will be taught by professors in the Bert W. Wasserman Department of Economics and Finance. Many of these professors teach similar courses at the MBA level and in the existing programs, including the Executive Master of Business Administration (EMBA), the Executive Masters of Science in Finance (EMSF), and the Financial Statement Analysis (EMS-FSA) programs. These faculty members also support similar courses in the International Executive Programs currently offered in Singapore, Taipei, and Paris.

The faculty in the Department of Economics and Finance are committed to creating and enhancing our students’ educational opportunities. We currently offer masters level courses in options, futures, international financial markets, and debt markets on a regular basis in all of these programs. These courses are usually fully enrolled, reflecting keen student interest in all phases of derivative securities, trading, and markets.

Further, we devote considerable efforts to keep abreast of current developments and emerging trends in all areas of finance, and pay special attention to newer areas like risk management that are of critical and growing importance. Several faculty members are leading researchers in the area of risk management or in closely related areas that form the intellectual foundations of risk management. Among others, some of the more noteworthy include Professors Kishore Tandon, Terrence Martell, Linda Allen, Armen Hovakimian, Lin Peng, and Liuren Wu.

In the Spring and Fall 2011 semesters, we offered a masters-level course in financial risk management for the first time. In those semesters, it was offered as a special topics course, Finance 9790 Seminar in Finance, with the topic Risk Management in Financial Institutions. It successfully attracted a mix of both honors and flex-time MBA students. Based on student response so far, we have submitted to the Zicklin Graduate Curriculum Committee a proposal for a new course in risk management. For the Fall 2012 semester, we plan to offer this course under the title “Risk Management in Financial Institutions.”

Effect of establishment of the proposed program at Baruch College. Although students with an interest in finance now have several choices, none is focused in the area of financial risk management. They can pursue an MBA with a finance concentration in the regular or honors MBA program. This is an attractive option for students who want a general business degree with some advanced courses in finance. However, students can complete a finance concentration with as few as four finance courses, and many students want many more courses in finance. Some of these students consider one of two executive programs that concentrate on finance. The first of these is the Executive MS in Finance (EMSF) program. It is a 30 credit program, given in a period of 10 months on a full-time basis. It is appropriate for students who are entering the field and want a general introduction to all of the major areas of finance. Another choice is the Financial Statement Analysis (EMS-FSA) program, which focuses on financial and securities analysis. This program has partnered with the CFA Institute, the creator of the CFA charter for securities analysts. It is attractive to students who are more advanced in their careers and are actively pursuing opportunities in securities analysis and the CFA charter. The proposed MS in Financial Risk Management would thus offer a new option to students who
are more advanced in their careers, and currently have or expect to assume risk management responsibilities in their firms.

Although the proposed MS in Financial Risk Management builds on Baruch College’s existing executive programs, it complements rather than duplicates them. Like the existing EMSF and EMS-FSA programs, it is designed to offer an intensive program aimed at working professionals. Its curriculum is distinctive and has limited overlap with either of those programs. Indeed, at most 9 out of 30 credits are in courses currently offered in the EMSF program. Even in these cases, the focus and delivery will be slightly different in the proposed program. It is interesting to note that the proposed degree complements the EMS-FSA program in a very fundamental way. Securities analysis is associated with the “buy” side of Wall Street. In general, buy-side decisions deal with the analysis and choices among investment opportunities. By contrast, risk management is more closely associated with the “sell” side, which includes investment banking and other financial institutions that create, issue, and trade financial securities.

The proposed MS in Financial Risk Management also complements the MS program in Financial Engineering, which is offered by the Department of Mathematics in the Weissman School of Liberal Arts. The financial engineering program offers students rigorous treatment of high-level mathematics used to model and solve financial problems, and emphasizes computational techniques. As such, its aim is to prepare students with strong technical backgrounds with the mathematical knowledge needed to create, value, and utilize innovative securities and trading techniques. This goal differs from that of the proposed MS in Financial Risk Management, which is to prepare practicing finance professionals with the knowledge and tools needed to identify and implement risk management programs for their firms. We note here that the director of the Financial Engineering program, Professor Dan Stefanica, founded the Baruch College Chapter of the Global Association of Risk Professionals. Thus, Baruch’s association with GARP in the new FRM program represents the expansion of an existing relationship, as opposed to the development of a new association altogether.

**Relation of this program to the mission of Baruch College.** This program is highly appropriate to Baruch College’s mission, which says in part:

Baruch College educates men and women for leadership roles in business, civic and cultural affairs, and academia. It offers rigorous baccalaureate, masters, and doctoral programs to qualified students who seek careers in business, public affairs, and the arts and sciences. The College’s graduate programs focus on professional preparation that enables students to become leaders and innovators in their fields.

Finally, this program will also aid in the achievement of the Zicklin School of Business mission in that it will promote “excellence in education through our undergraduate, MBA and other master’s level, doctoral, and executive business programs, to prepare students for success in the global economy.”
2. Need and Justification

   **Students and the financial community.** Anyone who successfully manages risk in a large financial firm must have a strong and clear understanding of complex securities, financial markets, securitization, and hedging strategies. The recent financial crisis has focused attention on the need for better understanding of derivative securities and for much greater competence in their uses. Advanced education in the area of financial risk management will enable students to utilize and apply their knowledge in ways that are appropriate for their firms. This encompasses the creation of new securities to hedge existing positions, to serve the functions of financial institutions as asset transformers, and to meet new needs in the financial markets as they develop in the future. These capabilities will serve students in their future careers, and their firms. Indeed, it will serve the broader financial community, as well as regulators who must monitor and guide financial firms to protect the financial system and the economic health of our society.

   The FRM designation of the Global Association of Risk Professionals is the premier professional certification in the area of financial risk management, and attainment of the FRM certificate is extremely challenging. In the 2009 and 2010, the rate of passage on the certification examination was 55%. The rate of passage in 2011 was 62%. This suggests that a well-designed, thorough degree program will serve students interested in careers in risk management. We have recently met with representatives of this organization to discuss the possibility of partnering with them, and this partnership will be welcomed on both sides.

   Letters of support for the proposed program are included in Appendix B. The letters are from esteemed professionals in the field of risk management. Mr. James Lam, President, James Lam & Associates, expresses the expectation that “students who complete the MS degree in Financial Risk Management will see enhanced career opportunities in business, finance, and risk management.”

   Mr. Allan Grody, President, Financial InterGroup Holdings Ltd., concludes that “it is your opportunity through educating your students to set the risk management discipline on the right path toward risk adjusting the financial system.”

   Mr. Joseph M. Busuttil, Managing Director, Goldman Sachs, notes that “the demand for appropriately trained and skilled financial risk managers has never been higher and I expect the trend to continue.”

   Finally, Mr. Viktor Grinberg, Vice President, JPMorgan Chase, states that “out of the number of the educational organizations that are able to provide such a program, Baruch can probably offer one of the best possible choices.”

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1 The letters refer to a proposed executive MS degree. The name of the proposed program was subsequently modified not to include the word “executive” at the suggestion of the Graduate Advisory Committee to reflect our intention to offer the program to candidates who are qualified for it but who may not meet typical executive program requirements of tenure and rank in their business careers. The program will still be offered in Baruch’s Executive Programs Office, and in the full executive format. This qualification also applies to the external reviews in Appendix L.
There are significant job opportunities for financial risk management professionals. Listed in the GARP website are 59 job listings (as of January 10, 2012). Of these, many are located in New York City. A sample of positions is provided in Appendix C. Although those for the highest level positions require extensive experience at the managerial level, many have an advanced degree in finance, statistics, or a related field, as a minimum requirement. All of these listings specify either that GARP’s FRM certification is required or that it is preferred. The proposed MS in Financial Risk Management would fulfill this important requirement. Also shown in this appendix is a chart from Indeed.com that illustrates growth in employment in recent years. Notably, since the financial crisis of 2008-2009, the number of positions in this field has not only recovered, but has grown at nearly exponential rates.

**Similar programs at other CUNY colleges.** We are aware of only one existing program in the CUNY system that is focused on risk management: Queens College/CUNY has implemented a MS degree program in Risk Management, effective Sept. 1, 2010. Their program is very comprehensive, and is housed in the Department of Economics. It is an inter-disciplinary effort of several departments, including the Departments of Accounting and Information Systems, Mathematics, and Computer Science. Their program offers students a choice among three areas of concentration:

- Accounting/CPA, which prepares students for careers as Certified Public Accountants
- Finance/CFA, which prepares students for the CFA exams, and
- Dynamic Financial Analysis Modeling, which prepares computer science students for work in a wide range of risk management applications.

They emphasize that their programs are distinct from others in the area, including Baruch’s existing programs, in that the Queens programs are more multi-disciplinary in approach. It is evident that their risk management program encompasses a wide range of fields that are already taught across Baruch College’s existing curriculum. It may be noted that the term “risk management” can refer to many different things. Most broadly, it can refer to the management of any kind of risk, ranging from financial to political, even to any kind of personal risk. Our use of the term refers specifically to financial risk management, while Queens’ use of the same term is broader, and encompasses economic, accounting, and technological risks as well as financial risk.

Based on our reading of the Queens program proposal as submitted to CUNY in mid-2009, there appears to be virtually no overlap between Queens’ offerings and that of the proposed MS Degree in Financial Risk Management. Another distinction is between the populations of students most likely to elect a program in risk management at either Queens or Baruch. Ours is a program aimed at working professionals already somewhat advanced in their careers, while theirs will appeal to a broader array of more traditional students. Regarding the field of risk management, the Queens program proposal states: “We expect this to be a growing

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2 A Google search on the term “CUNY risk management” yields about 163,000 results. The top eight results refer to CUNY’s efforts in the area of Environmental, Health, Safety and Risk Management.
area, and indeed, demand would probably exist for more than one program in the future within CUNY.”

**Similar programs at other local colleges.** The program most similar to the proposed program is the MS in Financial Risk Management offered by the University of Connecticut, mentioned above. It is a 34-credit program, with a cost of $39,950 per student. Since that program is offered in Stamford, CT, it is most attractive to candidates who work in Stamford and the surrounding area of Fairfield County. More local to Baruch College are the programs of NYU, Fordham, and Columbia.

As summarized in Appendix D, NYU offers an MS in Risk Management for Executives that it runs with the Amsterdam Institute of Finance and the Hong Kong University of Science and Technology. Course modules are given in New York, Amsterdam, and Hong Kong. The program cost to students is $63,500, exclusive of travel and hotel expenses. NYU’s program is a true executive program. Ours is a more traditional degree program with much more comprehensive and technical coursework. Students who enter our program are more likely to be early or mid-career executives than higher-level executives who will pursue the NYU program.

NYU’s professional partner is the Professional Risk Managers International Association (PRMIA), another association for risk management professionals. The certifications of GARP and PRMIA are similar in that their exams cover a lot of the same material. Our decision to partner with GARP was based on two key considerations. First, when we started this proposal two years ago, Baruch had an existing relationship with GARP though the MS in Financial Engineering degree program, and a university chapter with them. Second, an intensive review of the content covered in the GARP and PRMIA curricula showed that GARP’s was more comprehensive and advanced, and provided an academic basis more in line with a 30-credit degree program than PRMIA’s.

Fordham University offers an Advanced Certificate in Financial Risk Management that is directly based on the GARP FRM curriculum. It is offered in Fordham’s Westchester campus location, outside of White Plains, NY. It is 16 credits, with a comprehensive fee of $20,000.

Columbia University offers an executive certificate program in risk management. Student delegates who take the complete course are awarded a “certificate of completion” from Columbia Business School and PRMIA. Its cost per student delegate is $9,995. As a certificate program, Columbia’s program provides students with enough knowledge to pass the PRMIA certification exam, but would not provide them with the strong technical background of our fuller degree program.

**3. Student Interest and Enrollment**

Growing enrollments in several related program areas show considerable and growing interest in all aspects of financial risk management. Enrollments in the BA in Actuarial Science program increased from 74 students in 2007 to 138 in 2011, an increase of 86%. Graduates of this program would be excellent candidates for graduate education in financial risk management.
The MS in Analysis of Financial Statements, Internal Operations and Risk Management was registered in April, 2008. Between its inaugural class in 2008 and 2011, the most recent year for which we have data, its enrollments rose from 14 to 24 students. Enrollments in the MS in Statistics rose from 17 students in the class entering in Fall 2007 to 56 students in the Fall 2011, an increase of 230%. Finally, the extent of interest in the MS in Financial Engineering program is evidenced by impressive results for admission for the Fall 2012 semester. There were 640 applicants; of these, 37 were admitted, and 31 of those enrolled.

Based on our experiences when Baruch’s existing EMSF and EMS-FSA programs were offered for the first time, enrollment in the new program is expected to be about 12 students in the first year. Enrollments in subsequent years are anticipated to be in the range of 15-18 students. The capacity of the facilities used in these programs can accommodate up to about 40 students. Again, as based on Baruch’s experiences in the EMSF and EMS-FSA programs, attrition is usually about two or three students per cohort. Please refer to the table in Appendix E for detailed projections. We estimate that the break-even level is around 12 students. Although it is unlikely that the program will be offered if enrollment is lower than that, specific decisions will reflect conditions and expectations at the time of offering.

Students entering the proposed program must have completed prior academic courses in economics, finance, statistics, and calculus. They must have earned a GPA of at least 3.0 in their undergraduate program, although consideration will be given to the selectivity and stature of the school, and to students whose undergraduate major was in a technical subject like mathematics, science, or engineering. They must complete and submit satisfactory scores for the GMAT (or the GRE) exam. For the GMAT exam, students should earn scores of at least 550. TOEFL is required for applicants whose native language is not English or if educated in non-English speaking institutions. A minimum TOEFL score is 590, which corresponds to the minimum acceptable score for students in Baruch’s other master’s level programs. A personal interview with the Executive Programs Director and the Academic Director is required.

Although the program will be offered by the Executive Programs Office, admission is not limited to executives. While some professional or managerial experience in finance is desirable, it is not required. Prospective students must have a realistic desire to prepare for professional risk management responsibilities in their careers.

The program will be offered in the format of Baruch’s existing executive programs. This format includes the cohort structure in which all students take the same courses together and in the same sequence, the provision of class-day meals, all textbooks and classroom materials, a special program orientation, and admission to special conferences relating to risk management that are held at Baruch College during the year of the program. This format was selected for the risk management program to provide the best possible structure for the delivery of an intensive, challenging curriculum that is directed toward working professionals.
4. Curriculum

The proposed program includes fifteen courses and modules, for a total of 30.0 academic credits. A brief list of the courses is shown in Appendix A, and descriptions of the courses are shown in Appendix F. Of the 15 courses, eight are new, and the syllabi of these new courses are in Appendix G. These course proposals have been approved by the Zicklin Graduate Curriculum Committee. This committee paid special attention to the issue of education in ethics in the context of risk management. The curriculum includes a 1.5 credit course in ethical issues. In addition, and at the request of this committee, each course syllabus shows that at least one class session will be devoted to ethics. This ensures that ethical issues will be considered throughout the curriculum.

The courses are to be offered in cohort fashion, with all students in a cohort taking the same courses together. Most of the classes will be given on Saturdays. The only exception will be classes taught by professors who, for religious reasons, are unable to teach on Saturdays. (As currently envisioned, this applies to only a single professor. In this case, the class will be given on Thursday evenings.) The academic year is divided into four trimesters, from September through August. Thus, this is a full-time program, as are Baruch’s existing EMSF and EMS-FSA programs. The program sequence is summarized in Appendix H.

The courses fall into three general areas: basic tools and institutional background, the key areas of risk management, and courses that help students develop an executive-level understanding of the risks facing the firm, and the capacity to develop strategies to manage those risks.

The first area of courses covers the fundamental tools used in financial risk management and institutional background. It includes courses in statistics, bond pricing and markets, classical portfolio theory, and derivatives. It also includes an overview of financial institutions, the chief users (and developers) of modern risk management techniques. This overview covers traditional forms of risk management in financial institutions. These are the specific courses in this area:

- Fin 9851 Classical Foundations of Financial Risk Management
- Mth 9841 Statistics for Finance
- Fin 9795 Debt Instruments and Markets
- Fin 9895 Special Topics in Corporate Finance: Futures and Forward Markets
- Fin 9891 Special Topics in Investments: Options Markets
- Fin 9784 Management of Financial Institutions

The second area of courses concentrates directly on financial risk management. These courses cover the key areas of risk management: market risk and value at risk (VaR), credit risk, operational, and investment risks. An additional course covers the specific risks encountered by multinational firms involving foreign currency exposure, exchange rates, repatriation, and expropriation, among others. This area includes these courses:

- Fin 9852 Measurement and Management of Market Risk I
- Fin 9853 Measurement and Management of Market Risk II
Fin 9854  Measurement and Management of Credit Risk I  
Fin 9855  Measurement and Management of Credit Risk II  
Fin 9856  Measurement and Management of Risks in Operations and Information Technology  
Fin 9857  Measurement and Management of Risks in Investments  
Fin 9788  International Corporate Finance  

The third area of courses views financial risk management issues from the perspective of senior managers within the corporation. The first of these courses covers legal issues and corporate governance, and helps students develop a deep understanding of their legal and ethical responsibilities as individuals, managers, and corporate officers. The second serves as the program’s capstone. Students will analyze and evaluate a series of cases that managers encounter in real-life business situations. By applying the models and techniques covered in the earlier courses, students will strengthen their abilities to identify new risks facing a firm and formulate effective ways of managing and controlling these risks. This area includes these courses:

- Fin 9858  Implications of Corporate Governance, Regulation, and Ethics for Risk Management  
- Fin 9790  Seminar in Finance (Capstone Course)  

As in the existing Executive Programs, prerequisites are adapted to the special cohort structure. All of the courses are required, and there are no elective courses.

Because this is a graduate program, no articulation plans are needed.

5. Cost Assessment

A. Faculty

Current full-time faculty members of the Zicklin School of Business are qualified to teach all of the courses planned for the program, both new and existing. Summarized in Appendix I is a list of the courses and of faculty members who currently teach the course, or one quite similar. This list is not inclusive, as various faculty members generally teach more than one of these courses. All of the faculty members shown are members of the Bert W. Wasserman Department of Economics and Finance, and all have doctoral degrees. This listing does not preclude the assignment of a course to an adjunct faculty member in appropriate circumstances.

This list is not a set of course assignments, but rather an indication that all of the academic courses in the planned program can be covered by our current staff. Complete curricula vitae are available from the Department of Economics and Finance upon request.

As is the case with existing Executive programs, faculty who teach courses in the EMS-FRM program will be paid as adjuncts. Therefore, no additional new faculty will be hired when this program is offered.
B. Facilities and Equipment

We expect that no new physical facilities and equipment will be needed.

C. Library and Instructional Materials

In the Executive programs at Baruch College, comprehensive student fees cover all classroom materials, such as textbooks, meals on class days, and special event costs, such as admission to conferences held at the College. These direct costs per student are estimated to be $6,000 in the first year, and to inflate at a rate of 2% annually thereafter. We do not expect that the budget of the Newman Library will be affected by the program.

D. Five-Year Financial Projections

Projections of costs and revenues for the first five years of operation are provided in Appendix J. Summary projections of expenses and revenues are included as Tables 1 and 2; more detailed projections are included in Tables 3 and 4. These tables follow the required CUNY format.

In brief, the costs of this program are expected to be similar to those of the existing executive programs. Faculty members are paid as adjuncts, and the credits taught are not part of their regular workload. The average cost per credit is about $4,500. In the first year of operation, the faculty cost will be a total of $135,000, which covers 30 credits to be taught in that year. The faculty cost per credit is assumed to inflate at a rate of 2% per year in the 2014-2018 period. Because of the unique nature of the risk management curriculum, none of the courses are identical to those in the existing EMSF of EMS-FSA programs.

Although no new facilities or equipment will be needed, additional administrative support and overhead will be needed in the Executive Programs Office. The “other” category includes direct expenses per student of $6,000 as well as overhead, estimated at $199,500. This figure includes the projected cost of a program administrator of $150,000. The total “other” grows with the number of students and with inflation.

The base assumption on the comprehensive tuition and fees for the 30-credit program is $42,000 per student. This covers tuition, books, meals, and other items in the program that are standard in all of the existing executive programs. The projections are based on modest assumptions of enrollment, with 12 students in the first year, growing gradually to 18 students by the fifth year. In its first year, the EMS-FSA program had 12 students, and this is the basis for our estimate of first-year enrollments.

Since this will be a new program, there are no existing students. Since this will be a full-time program, there will be no part-time students. Since this is a new program in a new area of finance, we expect that there will be little or no impact on enrollments in the existing programs. Since this will be a full-time program, international students will be eligible to enroll in it. In this way the FRM program is similar to the existing EMSF and EMS-FSA programs, both of
which are full-time programs in which some international students do enroll. As in the case of costs, revenues are assumed to inflate at a rate of 2% per year.

Program administrators have discretion to decide whether to proceed with a program with fewer than the break-even number of students of around 12. The actual decision will be made based on conditions at the time, although it is unlikely that the program would be offered unless at least 12 students enroll.

A comparison of revenues and costs indicates that, even with modest assumptions on enrollments, the program should be able to cover its costs in each of the first five years of operation.

6. Evaluations

A. Internal Evaluation and Outcomes

Assessment of students. Evaluations will be made of student learning and achievement in several ways. The first and primary means is through students’ course grades, as well as evaluations of accomplishments on projects and presentations.

Since our program is structured to encompass the curriculum of our planned academic partner with the Global Association of Risk Professionals (GARP), all of our students are likely to enter the program with the expectation of taking the examinations for the Financial Risk Manager (FRM) certification. Those exams are not part of our program, and students will register for them and take them separately and outside of our program. However, a critical measure of student achievement will be successful passage of the FRM examinations. GARP publishes a list of successful candidates, so it will be possible for us to identify graduates of this program who earn the FRM certificate. It may be noted that this form of assessment is similar to that of graduates of the Zicklin MS in Financial Statement Analysis, which has an academic partnership with the CFA Institute, sponsor of the Chartered Financial Analyst (CFA) professional certification.

Assessment of the program and definition of program learning goals. The plan for program evaluations is summarized in Appendix K. This plan is designed in accordance with the current efforts in the Zicklin School to implement assessment programs to monitor students’ progress toward meeting program learning goals, and to provide significant opportunities for faculty members to utilize information from the assessments to improve on course and program delivery.

The plan begins with a statement of learning goals for the program, as shown in Table 1 of Appendix K: (1) Core knowledge of risk management; (2) Technical and analytical skills; (3) Leadership and communication; and (4) Ethical awareness

The courses in which assessment of students’ progress for each learning goal will take place are shown in Table 2. A preliminary outline of how students’ progress toward each goal
will be assessed is shown in Table 3. A key aspect of the assessment design is to allow for feedback from student experience, so that faculty teaching in the program are able to utilize the assessments to refine and improve their course presentation and delivery.

**Assessment of faculty.** The main forms of assessment of faculty will be observation by faculty peers and student course evaluations. Although both of these are traditional forms of assessment, significant attention will be devoted in the early years of the program to shaping and refining the curriculum. This will involve unusually close communication between the faculty who teach the various courses and the academic director of the program.

**B. External Evaluations**

All new proposed graduate programs within CUNY must be evaluated by two external reviewers. Each must be an “expert in the subject area who is from a college or university outside the New York metropolitan area.” Our reviewers are:

Professor Michael Pagano, Ph.D.
The Robert J. and Mary Ellen Darretta Endowed Chair in Finance
Villanova University

Professor Hassan Tehranian, Ph.D.
Griffith Family Millennium Chair Professor
Chairperson, Finance Department, Carroll School of Management
Boston College

The external evaluations are in Appendix L. Also included in this appendix are brief excerpts from the curriculum vita of each reviewer. Both are eminent experts in the field of financial risk management, based on their very impressive records of research and consulting in this field. It is also noteworthy that both show significant accomplishments in research in other areas of finance research, teaching, service to their universities, and professional activities.

In brief, both reviewers strongly support the establishment of a financial risk management program at Baruch College. Following are brief quotations from their comments:

Professor Pagano writes that “the demand for well-trained risk managers has grown dramatically…. This proposed MS degree will help meet this demand in one of the most important financial capitals of the world.”

Professor Tehranian writes that “the recommended program is in the mainstream of what is happening around the world. This proposal clearly offers Baruch College a great opportunity for expanding its degree offerings in an important and vital area. Students, faculty, an array of financial and physical resources, as well as support from major stakeholders, suggest that the time is now and Baruch College is well suited to undertake this task.”
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### Proposed Curriculum for the MS in Financial Risk Management

<table>
<thead>
<tr>
<th>Course</th>
<th>Number of Credits</th>
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<tr>
<td><strong>Trimester 1</strong></td>
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<tr>
<td>1 Fin 9851 Classical Foundations of Financial Risk Management</td>
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<td>3 Fin 9795 Debt Instruments and Markets</td>
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<td><strong>Trimester 2</strong></td>
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<tr>
<td>5 Fin 9891 Special Topics in Investments: Options Markets</td>
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<td>6 Fin 9784 Management of Financial Institutions</td>
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<td>7 Fin 9852 Measurement and Management of Market Risk I</td>
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<td><strong>Trimester 3</strong></td>
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<td>8 Fin 9853 Measurement and Management of Market Risk II</td>
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<td>9 Fin 9854 Measurement and Management of Credit Risk I</td>
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<td>10 Fin 9855 Measurement and Management of Credit Risk II</td>
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<td>11 Fin 9856 Measurement and Management of Risks in Operations and Information Technology</td>
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<td>12 Fin 9857 Measurement and Management of Risks in Investments</td>
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<td><strong>Trimester 4</strong></td>
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<td>13 Fin 9788 International Corporate Finance</td>
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<td>15 Fin 9790 Seminar in Finance (Capstone Course)</td>
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Appendix B
Letters of Support

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<tr>
<th>Mr. James Lam</th>
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<td>President, James Lam &amp; Associates</td>
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<table>
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<tr>
<th>Mr. Allan Grody</th>
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<td>President, Financial InterGroup Holdings Ltd.</td>
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<th>Mr. Joseph M. Busuttil</th>
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<td>Managing Director, Goldman Sachs</td>
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<th>Mr. Viktor Grinberg</th>
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<tr>
<td>Vice President, JPMorgan Chase</td>
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March 1, 2012

Dean John Elliott
Zicklin School of Business
Baruch College/CUNY
55 Lexington Avenue, Box 13-260
New York City, NY 10010

Dear Dean Elliott:

I trust all has been well with you since our last meeting on April 5, 2011. Thank you for sharing all of the exciting news and developments at the Zicklin School during our meeting and in your follow-up letter.

The purpose of my letter is to provide you with my enthusiastic support for Baruch’s proposed MS program in Financial Risk Management.

As general background, I am president of James Lam & Associates, a Wellesley-based consulting firm founded in 2002. My firm provides consulting services in all aspects of risk management, as well as training services for board directors and senior executives. At the end of 2011, I established a joint venture with Odgers Berndtson (a top 5 global recruiting firm) to provide board advisory and executive search services with a focus on governance and risk engagements. I have lectured at Harvard Business School as the subject of a Harvard Business School case study, and have taught graduate-level courses in risk management and advanced derivatives at Babson College as an adjunct professor of finance. I am the author of *Enterprise Risk Management: From Incentives to Controls* (Wiley, 2003), which has ranked #1 best-selling among 25,000 risk management titles on Amazon.com. The book is currently in use as the core risk management text by several universities and professional associations. This year I expect to finish my second book on risk management. In 1997, I had the honor of receiving the inaugural Financial Risk Manager of the Year Award from the Global Association of Risk Professionals (GARP). Treasury & Risk magazine has also honored me as one of the “100 Most Influential People in Finance” in 2005, 2006, and 2008.

As a risk professional and Baruch graduate, I have reviewed with great interest a description of Baruch’s proposed MS degree program that was provided by Ms. Donna Haggarty, and have discussed the curriculum with Professor Gwendolyn Webb. I believe that the course list and
curriculum will effectively provide students with a strong background in financial risk management, and that students who complete the degree as outlined will be well positioned for GARP’s FRM certification. Moreover, I strongly believe graduates of the program will be well positioned in advancing their careers in risk management, which is one of the fastest growing professions in business and finance today.

As I explained in some detail to Professor Webb, I strongly recommend that the final course in the program, Finance 9790 Seminar in Finance, be focused on the area of enterprise risk management (ERM). ERM begins with the comprehensive assessment of a company’s business strategy and objectives, and provides an integrated framework for managing strategic and business risks, operational risks, and financial risks. Building on that, it evaluates interdependencies among these types of risks, and enables the firm’s executives to integrate these risks with other key business decisions, especially product development and pricing. In this regard, it enables them to tie risk management to business and financial performance. ERM is widely recognized as a best practice in business management, and is supported by global regulatory and industry standards. Recent regulations and standards centered on ERM include Dodd-Frank regulatory requirements, SEC disclosure requirements for public companies, Basel II and III for bank capital standards, and Solvency II for insurance capital standards. As such, I believe ERM would be the ideal capstone course for the proposed MS degree program. It would enable graduates to apply their acquired skills in a broader business context.

It is my expectation that students who complete the MS degree in Financial Risk Management will see enhanced career opportunities in business, finance, and risk management. Speaking, finally, as a proud alumnus of Baruch College, I am pleased to see the college making a significant commitment to offering this program.

Please let me know if I can be of further assistance in any way.

Sincerely,

James Lam
BBA, Class of 1983
March 5, 2012

Dean John A. Elliot
Baruch College
City University of New York
Zicklin School of Business
New York, NY 10022

via email Zicklin@baruch.cuny.edu

Dear Dean Elliot:

I am fully supportive of Professor Webb’s program design and advocacy for an Executive MS in Financial Risk Management in the Department of Economics and Finance at your school. To this end I have dialogued with Professor Webb and include my more granular observations of the program in the Attachment to this letter. As a former practitioner and educator, and now advisor in this field, I can attest to the great need for education around this maturing discipline.

The field of financial risk management is now going through a second transitional phase, having been formally born in the crisis of a failed bank in Germany, the Herstatt Bank in 1974, and now needing a second phase of relearning and discovery. The obvious failure of risk management to prevent, or even predict, the coming of this most recent financial crisis suggests more education of basic principles are needed as well as new discoveries.

I believe an institution of higher learning of Baruch and Zicklin’s stature entering this field at this time is most promising. Much is now known and lessons learned from the financial crisis. A new field of behavioral finance is advancing and shows promise of bringing mathematical models into conformity with psychologically driven financial markets. Information technology promises better and speedier aggregation and analysis of data for risk management. A global identification system for financial market participants and the products they trade is being defined at the G20’s Financial Stability Board (FSB) at this very moment that would bring a capability to view systemic risk across financial institutions. The FSB itself has been created to be the center of a global initiative to see risk exposures building up toward a next systemic contagion and to prevent it.

This program, coming as it is on the cusp of a new risk management regime could set the discipline of risk management on a journey toward the proper balance of rigorous technique and human judgment. Too many self-anointed experts and certifiers of skills have failed our public and private institutions, even institutions of higher learning are to be faulted.

To place the burden on a university such as yours to help in risk adjusting the financial system through education and innovation is an appropriate task for the City University of New York. Its educators have been awarded Nobel prizes for their insights into financial markets and its graduates have in great numbers reached the pinnacle of the corporate hierarchy.

To you and Professor Webb I say aim high. It is your opportunity through educating your students to set the risk management discipline on the right path toward risk adjusting the financial system.

Sincerely,

Allan D. Grody, President

www.FinancialInterGroup.com
From: Allan D. Grody [agrody@FinancialInterGroup.com]
Sent: Friday, February 10, 2012 8:42 AM
To: Gwendolyn Webb
Subject: RE: Financial Risk Management Program at Baruch College

I am most impressed – given the stated goal articulated on Page 6

“….Executive MS in Financial Risk Management, which is to prepare practicing finance professionals with the knowledge and tools needed to identify and implement risk management programs for their firms.”

Here are some of my observations. So you understand my suggestions I should caveat that I am of the opinion that risk management is an oxymoron, right now it is more about capital calculations and risk-adjusted product pricing, not yet the Management discipline that is required to what I refer to as “risk adjusting” the financial system:

- Incentive compensation of financial institutions does not appear in the curriculum. I believe it should be discussed as it is significant to the overall objective of risk adjusting the financial system. This includes topics such as: risk adjusted return on capital (RAROC); risk adjusted performance measurement (RAPM), claw backs; long tail ownership-like stakes in products or business units, etc.
- No reference to liquidity risk, economic capital, or funding risk which are major themes in the risk management community
- I cannot assess whether the topic of market risk includes the problems in the use of VaR as a risk management tool vs. its use for regulatory capital purposes
- You might consider extending the credit risk topic to encompass counterparty risk, credit value adjustments (CVA), central counterparties (CCPs), etc.
- You may want to consider the topic of Operational risk in its own category, separate form Hedge Funds and Investment companies. The reason is that Op Risk has focused on stochastic methods for capital calculations and the most rudimentary accepted best practice process call Risk Control and Self Assessments. Taken together the risk management community has collectively agreed that this doesn’t work as a proactive tool for mitigating operational risk. This is a dark area that needs some inspired students to focus on.
- The corporate ethics course i.e. governance, regulation and ethics is only 1.5 credits. This is one of the more significant understandings for students to have of the corporate discipline of risk management. I have just finished reviewing a book on just this topic for a publisher. The field of governance around the risk management discipline is evolving through awakened academic and practitioner interest.
- The capstone course should have cases not only from financial product risk management techniques, but also from the entire financial supply chain ecosystem, i.e. risk management techniques such as margin and collateral; audit trails of a financial
transaction’s life cycle; real time risk management techniques for trading; clearing, payment and settlement risk management; etc.

As I mentioned I worked on and used a software tool in my class that I would recommend you review (http://www.ssctech.com/Services/TrainingandLearning/tabid/432/Default.aspx). It could allow home study, perhaps even as a prerequisite to attending the program. It teaches most of the fundamentals of risk management principles and thereby could free up classroom time to do some of the things I am suggesting.

Regards,
Allan

From: Gwendolyn Webb [mailto:Gwendolyn.Webb@baruch.cuny.edu]
Sent: Friday, February 10, 2012 11:04 AM
To: Allan D. Grody
Subject: RE: Financial Risk Management Program at Baruch College

Allan,

Many thanks for your comments. Although I'm just beginning to seek and receive feedback, several of the things you mention are mirrored by others -- especially the need to address liquidity and enterprise risk management more clearly.

More specifically, the market risk course will cover VaR for both risk management and regulatory capital. The topics of operational risk and investment risk were placed in a single 3-credit course mainly so that the curriculum would have three 3-credit courses in management of market, credit, and all other risks. Your comment has been noted by others. An alternative might be to split that into two 1.5 credit courses, so I'll need to think about that. Since we hope to offer the program starting in September 2013, we have the luxury of time.

You may not be surprised that your view on the need for stronger emphasis on ethics was also a concern of our Graduate Curriculum Committee. Actually, our committee insisted that each course syllabus will include at least one session focused on issues of ethics. As I work out the curriculum, those issues will be more visible.

Thanks also for the link to the software tool, which might be very helpful.

Best regards,
Gwendolyn Webb
March 20, 2012

Dean John Elliott
Zicklin School of Business
Baruch College/CUNY
55 Lexington Avenue, Box 13-260
New York, NY 10010

Dear Dean Elliott:

I am writing in support of the proposal to create an Executive Master of Science in Financial Risk Management. As a Baruch Alum, I have had the opportunity to assist the College in a number of ways and have been impressed with the college’s ability and foresight to keep up with the ever-changing business environment.

Financial Risk Management is an evolving discipline. It requires core competencies in statistics, market, credit and operational risks as well as emerging risks such as those resulting from new regulations. Many of the financial risks facing an organization today are not mutually exclusive and are becoming more difficult to predict. It is clear from the recent Financial Crisis that the ability to form a comprehensive view of the various risks that an entity faces requires both real practical experience as well as a thorough academic foundation in modern risk management. Moreover, an organization’s ability to identify, understand and appropriately mitigate emerging financial risks timely, can mean the difference between a going concern and bankruptcy.

A focused academic curriculum would be an ideal complement to a graduate student’s existing professional experience. The demand for appropriately trained and skilled financial risk managers has never been higher and I expect that trend to continue. Baruch College is well positioned to provide thought leadership to practicing finance professionals and serve the growing needs of the financial industry, especially in New York.

If you have any questions regarding the above please do not hesitate to contact me at your convenience.

Respectfully Yours,

[Signature]

Josef M. Busuttil
Managing Director

Cc: Gwendolyn Webb, PhD.
Dear Dean Elliott:

A little over a year ago I was approached to provide the comments on the proposed financial risk management program at Baruch College. As this program is now closer to implementation, I would like to extend my support to the creation of such program at the respectful and well known university.

As a professional dealing with issues of financial risk management on daily basis, I can attest that such a program and the knowledge gained during the duration of this program will be highly beneficial to the participants as well as highly appreciated by the industry.

In my opinion, out of the number of the educational organizations that are able to provide such a program, Baruch can probably offer one of the best possible choices. As former graduate I can suggest that based on the traditional strength of its faculty, depth of coverage of the proposed curriculum, convenient schedule, and solid academic reputation, Baruch new financial risk management program should be a success shared by all its creators.

Respectfully yours,
Viktor Grinberg,
Vice President, JPMorgan Chase.

This email is confidential and subject to important disclaimers and conditions including on offers for the purchase or sale of securities, accuracy and completeness of information, viruses, confidentiality, legal privilege, and legal entity disclaimers, available at http://www.jpmorgan.com/pages/disclosures/email.
Appendix C, Part A

Information on Career Opportunities in the Area of Risk Management

Graphic illustration of growth in financial risk management jobs

Trends in Financial Risk Management

**Job Trends** from Indeed.com

Note: Indeed.com publishes the percentage changes, but does not make available the underlying numbers of jobs.

Source: Indeed.com (downloaded Jan. 12, 2012)
Appendix C, Part B

Information on Career Opportunities in the Area of Risk Management

Detailed descriptions of career opportunities in financial risk management as posted on the GARP website, December 24, 2011

1 Director, Enterprise Risk Management
2 Economic Capital Modeling
3 Enterprise Risk Analyst
4 Manager – Asset Allocation & Risk Management
5 Product Manager – Director of Quantitative Analysis
6 Product Manager
7 Quantitative Risk Analyst – Top Hedge Fund
8 Senior Quantitative Investment Risk Analyst
1. Director, Enterprise Risk Management

**Position Title:** Director, Enterprise Risk Management  
**Company Name:** ISO New England  
**Job Function:** Credit Risk, Energy Risk and Energy Risk Management, Enterprise Risk Management, Market Risk  
**Job Level:** Experienced  
**Job Type:** Full-Time  
**Location(s):** Holyoke, Massachusetts, 01040, United States  
**Posted:** November 3, 2011  
**Job Duration:** Indefinite  
**Min Education:** 4 Year Degree  
**Min Experience:** Over 10 Years  
**Required Travel:** 0-10%  
**Salary:** $175,000.00 - $200,000.00 (Yearly Salary)  
**Company:** ISO New England  
**Industry:** Energy  
**Company Type:** Non-Profit  
**Size:** 540 employees

**Job Description**

Reporting to the CFO, this position oversees the company’s enterprise-wide risk management program to identify and address internal and external threats/factors that may adversely impact the organization’s performance and business objectives. In addition this position is responsible for the development and implementation of policies (Financial Assurance) and procedures to enhance the ISO’s protections from Credit and Market risk. This role also includes responsibility for managing the Company’s Quality Assurance Program, its related Business Process and Record Management programs. This position is also responsible for overseeing and managing the company’s Business Continuity Program.

The Enterprise Risk Management role requires the incumbent to work closely with operations and administrative departments throughout the organization to assess potential threats and vulnerabilities, and develop the appropriate risk responses through mitigation and/or contingency plans.

In executing its Credit Risk and Financial assurance role the incumbent is responsible for establishing and ISO’s credit risk methodologies and systems, serving to protect the ISO and its stakeholders from counter-party default exposure. This position requires an awareness of industry, market, and economic trends/developments as they relate to management of credit and market risk while insuring the ISO continues to employ industry leading risk mitigation approaches. This position involves participation in organizations such as CCRO to benchmark ISO-NE against peers for best practice implementation and stay informed on regulatory concerns for market risk oversight by FERC and others.
The holder must have strong working relationships with Market Participants, State & Federal regulators (FERC, CFTC, SEC), senior management of other ISO/RTOs, and financial industry executives particularly in relation to the trading and risk management functions is required. Additionally, this position necessitates close involvement in new market design to assist in developing policy/procedures/rules to best position markets with respect to minimizing credit and market risk.

**Job Requirements**

- Fifteen or more years of experience. Prior experience in Financial/Credit Management, Quality Assurance Programs and Project Management.
- Demonstrated ability to effectively communicate with a wide variety of audiences, both within ISO-New England and outside the company.
- Progressive thinking, anticipating, flexible behavior.
- Maturity of judgment and decision making related to risk management and underwriting execution.
- Strong analytical skills and proven written and verbal communication skills.
- Demonstrated positive relationship management skills and positive experience interfacing with high-level executives.
- Proven people management and leadership skills.
- Understanding of some or all of the following: wholesale capacity and energy markets, state renewable energy portfolios, and environmental policy and regulation.
- Demonstrated ability to work with state regulators and other stakeholders to adopt improvements to regulations and laws that improve the electricity market.
- The ability to analyze and process data in a risk management system or build valuation tools in Excel is required.
- Strong word processing, computer spreadsheet, presentation, and quantitative analysis skills required.
- A Bachelor’s Degree in Business, Finance, Economics, computer science or other related discipline is required.
- A minimum of 10 years of experience in wholesale and/or retail electricity markets with at least 5 years involved in energy risk management.
- A minimum of 5 years managerial/supervisory experience required.
- Experience with reporting into a Board of Directors.
- Advanced degree in Business Administration, Computer Science or MIS is desired.
- Certification a plus: Global Association of Risk Professionals (GARP), Financial Risk Management (FRM), or Energy Risk Professional (ERP).

Source: GARP website, Careers page, downloaded Dec. 24, 2011
2. Economic Capital Modeling

**Position Title:** Economic Capital Modeling  
**Company Name:**  
**Job Function:** Market Risk, Quantitative Analysis, Risk Management  
**Location(s):** New York, New York, 10001, United States  
**Posted:** December 1, 2011  
**Job Level:** Experienced  
**Job Duration:** Indefinite  
**Min Education:** 4 Year Degree  
**Min Experience:** 3-5 Years

**Job Description**

Requires background in economic capital modeling, actuarial risk, insurance and investment products. A major global financial services organization is seeking a Risk Analyst with 4-5 years of experience to join their ERM team. Using your experience in risk methodology and analytics, participate in high profile initiatives by collaborating with senior managers across business lines.

**Job Requirements**

Must have strong project management skills and the ability to synthesize complex analytics into key points for recommendations to management. The position requires superb presentation skills and the poise to interact with high level executives. Candidates must have a degree from a top university (MS, MBA, FRM, CFA desirable) and 4-5 years relevant risk management experience with a major consulting firm or top financial services organization.

This position offers a base salary, competitive bonus and a comprehensive benefits package.

Keywords: enterprise risk, risk management, risk manager, risk analyst, insurance, actuary, actuarial, consulting, quantitative risk, economic capital modeling, capital modeling

Source: GARP website, Careers page, downloaded Dec. 24, 2011
3. Enterprise Risk Analyst

Position Title: Enterprise Risk Analyst
Company Name:
Job Function: Enterprise Risk Management, Quantitative Analysis, Risk Management
Job Level: Experienced
Location(s): New York, New York, 10001, United States
Posted: December 1, 2011
Job Type: Full-Time
Job Duration: Indefinite
Min Education: 4 Year Degree
Min Experience: 3-5 Years

Job Description

Requires background in economic capital modeling, actuarial risk, insurance and investment products. A major global financial services organization is seeking a Risk Analyst with 4-5 years of experience to join their ERM team. Using your experience in risk methodology and analytics, participate in high profile initiatives by collaborating with senior managers across business lines.

Job Requirements

Must have strong project management skills and the ability to synthesize complex analytics into key points for recommendations to management. The position requires superb presentation skills and the poise to interact with high level executives. Candidates must have a degree from a top university (MS, MBA, FRM, CFA desirable) and 2+ years relevant risk management experience with a major consulting firm or top financial services organization.

This position offers a base salary, competitive bonus and a comprehensive benefits package.

Source: GARP website, Careers page, downloaded Dec. 24, 2011
4. Manager - Asset Allocation & Risk Management

**Position Title:** Manager - Asset Allocation & Risk Management  
**Company Name:** Washington University Investment Management Company  
**Job Function:** Risk Management  
**Location(s):** St Louis, Missouri, 63101, United States  
**Posted:** November 16, 2011  
**Job Level:** Experienced  
**Job Type:** Full-Time  
**Job Duration:** Indefinite

**Job Description**

**Core Functional Responsibilities**

The Manager will work with the Director - Asset Allocation and Risk Management and WUIMC staff to develop and recommend strategies to achieve the investment goals of the endowment. The position will interface with all areas of the investment office. Specifically, the Manager’s responsibilities will include:

- Refining the asset allocation policy, including: capital market assumptions, scenario specification and testing of alternative allocation policies
- Recommending and advising on tactical asset allocation strategies through on-going capital markets research and review and discussion with colleagues and external investment managers
- Maintain and enhance WUIMC’s risk management process including definitions of risk, review and critique of various risk management approaches, risk reporting and risk mitigation strategies
- Maintain intergenerational equity models and data repository for quarterly endowment risk and position reporting
- Work with WUIMC staff on evaluating new investment strategies and asset classes for possible inclusion in the endowment portfolio
- Evaluate and recommend appropriate performance measures and benchmarks
- Conduct performance- and holdings-based analysis to demonstrate the ex-post and ex-ante risk and return characteristics of portfolios
- Develop and execute appropriate rebalancing policies
- Managing endowment liquidity requirements
- Review of endowment performance reporting and attribution for integrity
- Special projects and presentations as needed

**Job Requirements**

**Basic Job Qualifications**

- Risk management experience and familiarity with derivatives
- Demonstrated quantitative modeling skills
• Solid understanding of modern portfolio theory
• Solid understanding of the global capital markets
• Critical-, strategic- and creative-thinking skills
• Excellent research skills
• Strong oral and written communication skills
• Graduate degree in business, finance, economics, math, statistics or related field

Preferred Job Qualifications

• 3 to 5 years of experience in a multi-asset class environment such as an endowment, foundation, family office or pension plan
• Experience in the use of derivatives to manage portfolio objectives
• Financial Risk Manager (FRM) designation
• CFA charter holder or CFA candidate

Source: GARP website, Careers page, downloaded Dec. 24, 2011
5. Product Manager - Director of Quantitative Analysis

**Position Title:** Product Manager - Director of Quantitative Analysis  
**Company Name:** Oracle  
**Job Function:** Asset/Liability Management, Banking, Corporate Treasury, Information Technology, Market Risk, Quantitative Analysis, Risk Management  
**Job Level:** Experienced  
**Location(s):** Bangalore, Other / Non-US, India  
**Posted:** December 7, 2011  
**Job Type:** Full-Time  
**Job Duration:** Indefinite  
**Min Education:** 4 Year Degree  
**Min Experience:** 5-7 Years  
**Required Travel:** 10-25%  
**Job Description**  
Professional Area: Product Development  
Amount Of Travel: 0%-25%  
**Job Title:** Director of Quantitative Analysis  
**Organization Name:** Financial Services Applications

**Department Description**

Are you a risk management professional with financial engineering experience in Asset Liability Management, Treasury or Credit Risk? Do you enjoy working on a high-performance team to solve tough technical and analytical challenges? Our team is building powerful software to help financial services companies measure and manage their businesses. We want to transform how the industry does business, leveraging the newest technologies and the brightest minds. Join us and help realize this vision.

The Oracle Financial Services Global Business Unit is responsible for the development and marketing of industry specific profitability, risk management, regulatory compliance and budgeting and planning, business intelligence and data warehousing solutions. As a key member of this team, you will help design, build and deliver the next generation of these vital business solutions for the Financial Services industry!

**Brief Posting Description**

The Director of Quantitative Analysis will be a key member of the team responsible for developing our next generation Enterprise Risk and Performance Applications. Oracle has defined market leading applications for almost all major financial services analytical functions across risk, finance, and customer analytics. We are looking for a Director, of Quantitative Analysis who will help us shape the future direction our Application Suite.

In this role, you will be responsible for defining product requirements and coordinating engineers, quality assurance, other product managers, to successfully deliver product to market. At the core, the Director of Quantitative Analysis will be responsible building successful, state of the art quantitative models to be used in our applications.
**Detailed Description**

As a member of the Financial Services Global Business Unit division, you will be responsible for defining model requirements and documenting their results including the methodologies, conclusions, and recommendations. You will promote the exchange of ideas and application of best practices in financial modeling strategies, and create and review design specifications. You will communicate product/model strategy and functionality, initiate and foster relationships with other groups and review product documentation and collateral. Finally, you will ensure successful product releases based on corporate priorities.

**Job Requirements**

The duties and tasks of the position are varied and complex requiring independent judgment. You must be fully competent in ALM and Liquidity Risk Management fundamentals, especially as they relate to valuation techniques. You will have a project lead role and may supervise lower level personnel. A minimum of 5 years of model development, model validation, or hands on ALM experience at a bank is required. A PhD or a graduate degree in Mathematics / Statistics, Finance or Economics with an equivalent number of years hands on experience preferred. CFA or FRM is a plus.

**Additional Details**

Given this job description, we're looking for a Director, of Quantitative Analysis with the following qualifications:

- You must have a strong quantitative background with financial engineering experience.
- You need to perform robust proof of concepts for quantitative related projects: VaR, EaR, CFAr utilizing Historical, Variance-Covariance, and Monte Carlo Methods.
- Hands on experience in developing and using single factor and multi-factor term structure models such as Hull White, Black Karasinski, and/or others.
- You need to possess good communication skills including the ability to translate complex computations into an understandable format.
- You must have a strong grasp of current Asset Liability Management concepts needed to support the global financial services community.
- Hands-on experience with one or more of the market leading ALM software applications currently available in the market, such as QRM or Bancware is a plus.
- You should have a deep understanding of standard banking products, treasury instruments and derivative instruments commonly used by global banking firms
- You should have a deep understanding of Interest Rate Risk Management measures and their calculations such as Duration, Convexity, GAP, Stress Testing
- Possess a clear understanding of the fundamentals of different statistical estimation methods, have hands-on experience working with data, and an appreciation of practical data and estimation problems.
- You should have Strong Statistical and PC skills, including Oracle Data Mining, SAS programming, SQL, and/or MATLAB.
• Enthusiasm is critical. It's important for you to demonstrate passion for your work and the motivation to solve hard problems.
• A strong track record of achievement is critical. Be prepared to explain successful model development and implementations from previous endeavors.
• You need to be highly detailed oriented and you need to love solving problems. Our customers expect extremely high quality products. We don’t believe that you can deliver great products without individuals who are passionate about getting each detail right.
• You should be a team player and a good communicator. Part of the job is about defining the right product and features. The other part of the job is about communicating your ideas to the rest of the team.

Source: GARP website, Careers page, downloaded Dec. 24, 2011
6. Product Manager

Position Title: Product Manager  
Company Name: Axioma, Inc  
Job Function: Other  
Location(s): Atlanta, Georgia, 30350, United States  
Posted: December 15, 2011  
Job Type: Full-Time  
Job Duration: Indefinite  
Required Travel: None  
Company: Axioma, Inc

Job Description

Axioma is seeking an experienced product manager to join the product management team in our New York office. This position reports to the Senior Director of Product Management and will play a key role helping to direct Axioma’s risk product strategy.

The Product Manager is responsible for the product planning and execution throughout the product lifecycle, including: gathering and prioritizing product and customer requirements, defining the product vision, and working closely with engineering, sales, marketing and support to ensure revenue and customer satisfaction goals are met. The Product Manager’s job also includes ensuring that the product supports the company’s overall strategy and goals.

You must be able to communicate with all areas of the company. You will work with an engineering counterpart to define product release requirements. You will work with marketing to define the go-to-market strategy, helping them understand the product positioning, key benefits, and target customer. You will also serve as the internal and external evangelist for your product offering, occasionally working with the sales channel and key customers.

We use Scrum and other agile practices, and expect product managers to participate in improving our processes and practices. It is essential that you can work collaboratively in our team environment.

Responsibilities

- Assist with the definition the product strategy and roadmap, helping to establish key priorities
- Specify market requirements for current and future products based on market intelligence; this information will gathered from regularly scheduled visits to clients as well as from other client facing personnel
- Run pilot programs with early-stage products and samples; leverage early stage feedback as a basis for future enhancements.
- Analyze potential partner relationships for the product; work with closely with partners to assist them with the roll out of new product versions as well as new offerings.
• Possess/acquire a strong understanding of the competitive landscape and how to position the firm’s products against its primary competitors.
• Continually evaluate the core positioning and messaging for the product.
• Work with Marketing to develop sales tools and collateral.
• Brief and train the sales force on new and existing product offerings; assist sales with the high opportunity trials.

Job Requirements

• Strong verbal and written communication skills. Must be able to communicate effectively and confidently with users, team members and management.
• Excellent teamwork skills. Must be able to lead and work within cross-functional teams.
• Experience with (and understanding of) the investment decision making processes of equity managers is highly desirable; exposure to other asset classes from a buy-side perspective a plus but not essential.
• Knowledge of financial markets and investment management tools including multi-factor risk models, risk analytics, and performance attribution.
• Solid mathematical aptitude.
• Knowledge of agile development methodologies helpful.
• Bachelor’s Degree in Business, Finance, Computer Science, or Engineering from an accredited institution. MBA and/or CFA preferred; FRM designation a plus.
• 5-10 years of software marketing/product management experience.

Compensation includes a competitive salary commensurate with experience and a full benefits package including health, dental, 401k and includes participation in both the cash bonus program and the options (ISO) bonus program.

Source: GARP website, Careers page, downloaded Dec. 24, 2011
7. Quantitative Risk Analyst Top Hedge Fund

Position Title: Quantitative Risk Analyst Top Hedge Fund  
Company Name:  
Job Function: Quantitative Analysis, Risk Management  
Job Level: Experienced  
Location(s): New York, New York, 10001, United States  
Posted: November 2, 2011  
Job Type: Full-Time  
Job Duration: Indefinite  
Min Education: Masters  
Min Experience: 5-7 Years

Job Description

Risk Management team of top hedge fund, trading CDO and CDS, seeks quantitative analyst to build risk analytics for structured credit products and fixed income derivatives. In this role, the Analyst will be responsible for the technical design and building of analytical models and libraries, including grid methodologies, scenario analysis and core risk models. This includes specifying detailed requirements, testing and documentation of new and enhanced systems. The position will require close interaction with the end users (traders, researchers and risk managers) and programmers.

Job Requirements

Candidates must have:

- 5+ years relevant experience in a top financial institution or hedge fund
- An advanced degree from a top university (PhD/MS/MBA, FRM, CFA desirable).
- Product knowledge in credit derivatives, bonds and leveraged loans required.
- Familiarity with FinCad, Numerix, SQL desireable.
- Comfort in collaborating with quant developers (C#, .NET).

This position offers a base salary, competitive bonus and a comprehensive benefits package. Opportunity for career advancement.

Keywords: risk management, risk analytics, quantitative, quantitative risk, hedge fund, structured credit products, structured products, derivatives, credit derivatives, cdo, fixed income.

Source: GARP website, Careers page, downloaded Dec. 24, 2011
Position Title: Senior Quantitative Investment Risk Analyst

Company Name: Aflac


Location(s): Columbus, Georgia, 31901, United States

Posted: December 16, 2011

Job Level: Experienced

Job Type: Full-Time

Job Duration: Indefinite

Required Travel: 0-10%

Job Description

Principal Duties & Responsibilities

- Conducts quantitative analysis and modeling of credit and market risks across all global fixed income (FI) investment portfolios totaling approximately $100 Billion;
- Integrates credit and market risk models and measurement systems into FI and corporate investment strategies and capabilities; offers mitigation strategies for portfolio concentrations/exposures to market factors and conditions;
- Assesses feasibility and effectiveness of potential hedges and hedging strategies using CDS, swaps, options, futures, etc.;
- Conducts back-testing of strategy, VaR and credit risk exposure impact on P&L; calculates investment P&L and performs P&L attribution.

Job Requirements

Education/Experience

- Bachelor’s in computational or mathematical finance, financial engineering, applied math, statistics, etc. or other quantitatively intensive field;
- A graduate degree or work toward a graduate degree (required);
- 5+ years of professional job-related work experience;
- Bloomberg experience (required) and experience with one or more risk applications/services: Algorithmics, RiskMetrics (RiskManager, CreditManager), Moody's KmV/CreditEdge, Kamakura, Murex, BlackRock, BondEdge, QRM, Barra, etc. (preferred);
- CFA designation, GARP Financial Risk Manager (FRM), PRMIA Professional Risk Manager, or other similar professional designation (preferred).

Job Knowledge & Skills
• Superior quantitative capabilities and demonstrated analytical skills with in-depth understanding of quantitative risk models, advanced quantitative/mathematical modeling, stochastic calculus and Monte Carlo simulation;

• Strong understanding/experience with Economic Capital, ALM, VaR, CVaR modeling/analysis, investment products, strategies and markets etc., preferably for insurance companies;

• Strong understanding of and experience with valuation techniques, methodologies and models for valuing FI investments, structured finance (ABS, MBS, CMBS, CDOs) and/or derivatives (swaps, swaptions, options, futures)

• Strong knowledge and demonstrated experience with credit and market risk statistics, metrics and sensitivities (duration, convexity, KRD, PD, LGD, CVA, PFE, EAD, EDF, etc.)

Source: GARP website, Careers page, downloaded Dec. 24, 2011
## Appendix D

### Graduate Risk Management Programs in the NYC Area

<table>
<thead>
<tr>
<th></th>
<th>Univ. of CT</th>
<th>Fordham</th>
<th>NYU</th>
<th>Columbia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Degree</strong></td>
<td>MS in Financial Risk Management</td>
<td>Advanced Certificate in Financial Risk Management</td>
<td>MS in Risk Management for Executives</td>
<td>A Complete Course in Risk Management</td>
</tr>
<tr>
<td><strong>School</strong></td>
<td>School of Business</td>
<td>Graduate School of Arts and Sciences</td>
<td>NYU Stern</td>
<td>Columbia Business School, Executive Education</td>
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<tr>
<td><strong>Program Length</strong></td>
<td>15 months</td>
<td>na</td>
<td>1 year</td>
<td>6 months</td>
</tr>
<tr>
<td><strong>Tuition</strong></td>
<td>$39,950, for both in- and out-of-state students</td>
<td>$20,000</td>
<td>$63,500, excluding hotel and travel</td>
<td>$10,000</td>
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<tr>
<td><strong>Full or Part time?</strong></td>
<td>Part time</td>
<td>Part time</td>
<td>Part time</td>
<td>Part time</td>
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<tr>
<td><strong>No. of Credits</strong></td>
<td>34</td>
<td>16</td>
<td>na</td>
<td>na</td>
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<tr>
<td><strong>Association with GARP or PRMIA?</strong></td>
<td>GARP</td>
<td>GARP</td>
<td>PRMIA</td>
<td>PRMIA</td>
</tr>
<tr>
<td><strong>Program Location</strong></td>
<td>Stamford, CT</td>
<td>Westchester County, NY</td>
<td>NYC, Amsterdam, and Hong Kong</td>
<td>NYC</td>
</tr>
<tr>
<td><strong>Notes</strong></td>
<td>This is the only program in our region that would be a direct competitor with ours.</td>
<td>Partner with the Amsterdam Institute of Finance and the Hong Kong Univ. of Science &amp; Technology</td>
<td></td>
<td></td>
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Note: Data collected November, 2011
## Appendix E

### Projections of Student Enrollments

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<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
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<tr>
<td><strong>Academic Year</strong></td>
<td></td>
<td></td>
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<tr>
<td>2013-2014</td>
<td></td>
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<td>2014-2015</td>
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<td>2015-2016</td>
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<td>2016-2017</td>
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<tr>
<td>2017-2018</td>
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<table>
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<tr>
<td><strong>Full time</strong></td>
<td>12</td>
<td>0</td>
<td>15</td>
<td>0</td>
<td>18</td>
<td>0</td>
<td>18</td>
<td>0</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td><strong>Part time</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td><strong>Subtotal</strong></td>
<td>12</td>
<td>0</td>
<td>15</td>
<td>0</td>
<td>18</td>
<td>0</td>
<td>18</td>
<td>0</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>12</td>
<td></td>
<td>15</td>
<td></td>
<td>18</td>
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<td>18</td>
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Appendix F
Description of Courses in the Financial Risk Management Program

1. **Fin 9851 Classical Foundations of Financial Risk Management**
This course has two key objectives. First, it provides students with an overview of risk management and an understanding of the essential motivations for the study of risk management. Second, it provides students with a strong foundation in classical financial theory that is critical for the study of modern risk management models and concepts. In particular, students will study the traditional approach to risk management in equity securities, with an emphasis on portfolio theory and asset pricing.
1.5 hours, 1.5 credits
Prerequisite: Admission to the EMS-FRM Program and departmental permission

2. **Mth 9841 Statistics for Finance**
This course covers key concepts of probability and statistics used in finance in general, and risk management in particular. Topics include characteristics of the probability distributions most important in finance (covering non-normal as well as normal distributions), Bayesian probabilities, joint marginal and conditional probabilities, discrete and continuous random variables, empirical distributions, Monte Carlo simulation analysis, and linear regression.
3 hours, 3 credits
Prerequisite: Admission to the EMS-FRM Program and departmental permission

3. **Fin 9795 Debt Instruments and Markets**
This course analyzes debt instruments and their markets. It begins with a survey of the various types of securities, and their associated cash flow and risk characteristics. It then covers traditional bond yield calculations and the relation between bond prices and yields. It analyzes in detail the term structure of interest rates as embodied in spot, coupon, and forward yield curves. Also covered are analyses of the impact of default risk on bond valuation, debt market structures, and mortgage-backed securities and their markets.
3 hours, 3 credits
Prerequisite: Finance 9783, or admission to the EMS-FRM Program and departmental permission

4. **Fin 9895 Special Topics in Corporate Finance: Futures and Forward Markets**
This course covers forward and futures securities and markets in a wide range of underlying assets, including bonds and interest rates, foreign currencies, equities, and indexes. It provides basic analyses of the uses of these securities for hedging and speculation, and covers valuation models and market structures in detail. The course also examines forward rate agreements and the relation between spot and futures markets.
1.5 hours, 1.5 credits
Prerequisite: Finance 9783, or admission to the EMS-FRM Program and departmental permission
5. **Fin 9891 Special Topics in Investments: Options Markets**  
This course covers a wide range of financial options, with special emphasis on equity options. These topics are included: the structure and operation of organized option exchanges, investment strategies under different market scenarios, valuation models, and recent developments in the options markets and valuation modeling. Exotic options that are often used in risk management are also covered.  
1.5 hours, 1.5 credits  
Prerequisite: Finance 9783, or admission to the EMS-FRM Program and departmental permission

6. **Fin 9784 Management of Financial Institutions**  
This course begins with a survey of the major types of financial institutions, and identifies their main lines of business and the key risks that each faces. On the basis of this background, the course provides a detailed analysis of these risks, and then shows how the various financial institutions manage them. These methods include the more traditional approaches of managing asset and liability structures and controlling financial operations, as well as the more modern risk management techniques for controlling market and credit risks. Finally, the course covers the impact of the regulatory structure on financial practices, and the Basel guidelines for capital adequacy.  
3 hours, 3 credits  
Prerequisite: Finance 9783, or admission to the EMS-FRM Program and departmental permission

7. **Fin 9852 Measurement and Management of Market Risk I**  
This is the first in a sequence of two courses on financial market risk. This course covers key aspects of market risk, with a special emphasis on the concept, measurement, and control of market risks by financial institutions in their risk management programs. Students will be introduced to models in current use, and will analyze the assumptions and mathematical background underlying them in depth. Topics covered include: the stochastic nature of securities returns, estimation approaches of value at risk (VaR), issues of portfolio aggregation, and correlation measurement and forecasting.  
1.5 hours, 1.5 credits  
Prerequisite: Fin 9851, Mth 9841, and Fin 9795, and a minimum GPA of 3.0 (B average) in Fin 9851, Mth 9841, and Fin 9795.
8. **Fin 9853 Measurement and Management of Market Risk II**
   This course is a continuation of Finance 9852, The Measurement and Management of Market Risk I, and extends students’ knowledge of the concepts and measures of market risk. From this foundation, students will learn how financial institutions actively use these models to manage risk, and how these techniques are tested and evaluated in practice. This course will also include an analysis of the implications of market risk for regulatory capital requirements. Specific topics include: estimation of value at risk for derivatives and fixed income securities with embedded optionality, and evaluations using techniques of stress testing, and Monte Carlo and scenario analyses.
   1.5 hours, 1.5 credits
   Prerequisite: Fin 9852

9. **Fin 9854 Measurement and Management of Credit Risk I**
   This is the first in a sequence of two courses on modern credit analysis and management. This course focusses on the analysis of the risks of individual loans and borrowers. It covers several analytical models of credit risk, including both structural and reduced form models, among others. It deals with estimation and testing of the models, with a view toward characterizing and illustrating current and evolving industry standards and practices.
   1.5 hours, 1.5 credits
   Prerequisite: Fin 9895, Fin 9891, Fin 9784, and Fin 9852, and a minimum GPA of 3.0 in Fin 9895, Fin 9891, Fin 9784, and Fin 9852.

10. **Fin 9855 Measurement and Management of Credit Risk II**
    This course is a continuation of Finance 9854, The Measurement and Management of Credit Risk I. It extends the analysis of individual loans and borrowers to issues of the measurement and analysis of groups and portfolios of loans. It covers loan concentration risk, risk models based on ratings migrations, models appropriate for the evaluation of insurance firm risks, and the analytical derivation and use of risk-adjusted return on capital. This course also introduces students to the concepts and uses of credit derivatives.
    1.5 hours, 1.5 credits
    Prerequisite: Fin 9854
11. **Fin 9856 Measurement and Management of Risks in Operations and Information Technology**
This course introduces students to the nature of operational and information technology, and the risks inherent in these operations. These reflect risks to a firm associated with technical and human problems, as well as more specific problems associated with complex forms of informational technology. Students will evaluate the nature and potential severity of these risks, as well as innovative approaches to measuring and managing them.
1.5 hours, 1.5 credits
Prerequisite: Fin 9895, Fin 9891, Fin 9784, and Fin 9852, and a minimum GPA of 3.0 in Fin 9895, Fin 9891, Fin 9784, and Fin 9852

12. **Fin 9857 Measurement and Management of Risks in Investments**
This course covers risks inherent in the management of investments by major institutional investors, including mutual funds, pension funds, hedge-funds, and private equity firms. Against the background of classical portfolio theory, this course examines the special investment structures and practices of major institutional investors, and explores the ways in which each has unique investment aims and is subject to unique forms of investment risks. This analysis also takes into account the regulatory framework of each of the main types of institutional investors, and the implications for risk management and analysis for them.
1.5 hours, 1.5 credits
Prerequisite: Fin 9895, Fin 9891, Fin 9784, and Fin 9852, and a minimum GPA of 3.0 in Fin 9895, Fin 9891, Fin 9784, and Fin 9852.

13. **Fin 9788 International Corporate Finance**
This course extends the principles of finance to an international context. Firms that operate internationally face exchange rate risk in their investment and financing decisions, in addition to the usual fundamental risks. The course begins with an overview of the global financial environment, the existence of various currency instruments -- spot, forwards, futures, options and swaps -- and their applications in hedging exchange rate risk. It then discusses the management of foreign exchange exposure, including transaction, translation and economic exposures. Finally, it analyzes risks associated with major corporate finance activities of capital investment and budgeting, raising financial capital, and managing working capital, all in an international context. Major risks of repatriation and expropriation are discussed.
3 hours, 3 credits
Prerequisite: Finance 9770, or admission to the EMS-FRM Program and departmental permission
14. **Fin 9858 Implications of Corporate Governance, Regulation, and Ethics for Risk Management**
   
   The course is devoted to issues of corporate governance, and helps students develop a deep understanding of their legal and ethical responsibilities as individuals, managers, and corporate officers. Specific issues and cases covered include the responsibilities of businesses to the natural and governmental environments in which they operate, the roles and responsibilities of members of the firm’s board of directors, corporate reform, and the impact of board on the firm’s decision-making culture.
   
   1.5 hours, 1.5 credits
   Prerequisite: Admission to the EMS-FRM Program and departmental permission

15. **9790 Seminar in Finance (Capstone Course)**
   
   This capstone course in the risk management program is case based, and covers a wide range of applications of securities and risk management techniques. The selection of cases is intended to provide students with a variety of real-life examples showing how fixed income and derivative securities can be structured, developed, and designed to transfer risk. By applying the models and techniques covered in the earlier courses, students will strengthen their abilities to identify new risks facing a firm and formulate effective ways of managing and controlling these risks.
   
   3 hours, 3 credits
   Prerequisite: Finance 9770, or admission to the EMS-FRM Program and departmental permission
## Appendix G

**Syllabi of the New Courses Proposed for This Program**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fin 9851</td>
<td>Classical Foundations of Risk Management</td>
<td>47</td>
</tr>
<tr>
<td>Fin 9852</td>
<td>Measurement and Management of Market Risk I</td>
<td>53</td>
</tr>
<tr>
<td>Fin 9853</td>
<td>Measurement and Management of Market Risk II</td>
<td>58</td>
</tr>
<tr>
<td>Fin 9854</td>
<td>Measurement and Management of Credit Risk I</td>
<td>63</td>
</tr>
<tr>
<td>Fin 9855</td>
<td>Measurement and Management of Credit Risk II</td>
<td>68</td>
</tr>
<tr>
<td>Fin 9856</td>
<td>Measurement and Management of Risks in Operations and Information Technology</td>
<td>73</td>
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<tr>
<td>Fin 9857</td>
<td>Measurement and Management of Risks in Investments</td>
<td>78</td>
</tr>
<tr>
<td>Fin 9858</td>
<td>Implications of Corporate Governance, Regulation, and Ethics for Risk Management</td>
<td>83</td>
</tr>
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</table>
PART A: Academic Matters, Section AII: New Courses

New course to be offered by the Bert W. Wasserman Department of Economics and Finance

AII.10.1 Finance 9851 The Classical Foundations of Risk Management

This course has two key objectives. First, it provides students with an overview of risk management and an understanding of the essential motivations for the study of risk management. Second, it provides students with a strong foundation in classical financial theory that is critical for the study of modern risk management models and concepts. In particular, students will study the traditional approach to risk management in equity securities, with an emphasis on portfolio theory and asset pricing.

1.5 hours, 1.5 credits

Prerequisite: Departmental permission

Explanation. This will be a 1.5-credit course in the MS in Financial Risk Management program (EMS-FRM), now in the process of development. All students in the program will take this course in cohort format, and the course will be open to students in the EMS-FRM program.

This course will serve two main purposes. First, it will provide students with an overview of risk management, including coverage of the sources of risk to financial and non-financial businesses, key methodologies of risk management, and the ethical responsibilities and challenges facing risk managers. Second, it will review the basics of diversification, which is an underlying form of risk management in financial investments. This is key background information for future risk managers.

The attached syllabus includes several readings that are coordinated with the required study materials for candidates of the Financial Risk Manager (FRM) certification of the Global Association of Risk Managers (GARP). This professional association is our partner in this program. Their reading list is updated annually, and we expect that the syllabus of this course will be modified annually as well. This applies to all of the courses in this program.

Submitted for approval by the Executive Committee of the Bert W. Wasserman Department of Economics and Finance on January 9, 2012. A sample syllabus is attached.
Baruch College
The Zicklin School of Business
The Bert W. Wasserman Department of Economics and Finance
Finance 9851
The Classical Foundations of Risk Management

Professor: tba
Office: tba
Phone: tba
Hours: tba
Email: tba

Course Description

This course has two key objectives. First, it provides students with an overview of risk management and an understanding of the essential motivations for the study of risk management. Second, it provides students with a strong foundation in classical financial theory that is critical for the study of modern risk management models and concepts. In particular, students will study the traditional approach to risk management in equity securities, with an emphasis on portfolio theory and asset pricing.

1.5 hours, 1.5 credits
Prerequisite: Departmental permission

Learning goals

By the end of the course, students who complete this course should be able to:

- Explain the needs for, and uses of, modern risk management techniques in financial and non-financial firms.
- Utilize and implement key concepts of classical portfolio theory. This involves the abilities to apply, evaluate, and interpret a basic set of statistical concepts, including characteristics of statistical distributions, correlation, covariance, and variance.
- Identify and articulate the many ways in which financial decisions have ethical dimensions.

These goals are specifically related to the learning goals of the MS in Financial Risk Management program, which are as follows:

1. **Core knowledge of risk management.** Students will master the core elements of risk management, including concepts of market, credit, and operational risk, and regulatory requirements. They will identify the underlying sources of financial and business risks; formulate procedures to monitor and manage these risks; and be able to evaluate a firm’s compliance with regulatory requirements.

2. **Technical and analytical skills.** Students will develop technical and analytical skills needed to manage risks in large, complex financial institutions. They will formulate...
quantitative tools, models, and strategies to manage and control these risks in large financial institutions.

3. **Leadership and communication.** Students will formulate appropriate risk management strategies that take into account a comprehensive evaluation of the overall risk exposures of the enterprise; communicate risk management strategies clearly and persuasively to a firm’s top management, both orally and in writing.

4. **Ethical awareness.** Students will develop a deep understanding of ethical issues in all phases of risk management. They will identify circumstances in which the firm’s managers are most likely to face ethical challenges; and evaluate how professional codes of conduct in financial risk management are designed to guide managers’ actions in the presence of ethical challenges.

**Textbook**


- Chapter 5  Delineating Efficient Portfolios
- Chapter 13  The Standard Capital Asset Pricing Model
- Chapter 14  Nonstandard Forms of Capital Asset Pricing Models
- Chapter 16  The Arbitrage Pricing Model APT—A New Approach to Explaining Asset Prices

**Additional Readings**


- Chapter 1  The Need for Risk Management

René Stulz, Risk Management & Derivatives (Florence, KY: Thomson South-Western, 2002).

- Chapter 2  Investors and Risk Management
- Chapter 3  Creating Value with Risk Management


- Chapter 4, Section 4.2 only, Applying the CAPM to Performance Measurement: Single-Index Performance Measurement Indicators

Chapter 4  Financial Disasters


**Exams, Homework, and Assignments**

Homework problems and readings will be assigned, and there will be a final exam.

Students may bring to each exam a single sheet, 8.5 by 11 inches, on one side only, with notes and equations. You will need one of the following calculators on the exam: the HP 12C, HP 12C Platinum, TI BAII Plus, or the TI BAII Plus Professional. Laptop computers and cell phones are not allowed on the exams. You must have your own calculator for this purpose. Be sure to check its battery, and that you know how to use your calculator before you take the exams. Calculator user manuals are not allowed in the exams.

*Cell phones may not be used during exams for any reason. In particular, they cannot be used as calculators.*

Your course grade will be based on your exams and homework assignments. These percentages will be used to form your overall course average:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework and class participation</td>
<td>30%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>70</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Please be sure that your cell phone is turned off during class.
Academic Integrity

The Department of Economics and Finance fully supports Baruch College’s policy on Academic Honesty, which states, in part:

Academic dishonesty is unacceptable and will not be tolerated. Cheating, forgery, plagiarism and collusion in dishonest acts undermine the college’s educational mission and the students’ personal and intellectual growth. Baruch students are expected to bear individual responsibility for their work and to uphold the ideal of academic integrity. Any student who attempts to compromise or devalue the academic process will be sanctioned.

Additional information can be found at

http://www.baruch.cuny.edu/academic/academic_honesty.html
### Outline of Class Sessions

Each class has two sessions of 75 minutes each, with a 15-minute break in between.

*Subject to Change*

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<thead>
<tr>
<th>Class</th>
<th>Topic</th>
<th>Reading Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>An overview of risk management:</td>
<td>Jorion, Chapter 1</td>
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<td></td>
<td>What risks are relevant?</td>
<td>Stulz, Chapters 2, 3</td>
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<td></td>
<td>Why should firms manage risk?</td>
<td>Stulz: Risk management failures</td>
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<td>How does the risk management profession provide ethical guidance to</td>
<td>Allen, Financial disasters</td>
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<td>risk managers?</td>
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<td>2</td>
<td>The characteristics of the opportunity set under risk</td>
<td>E&amp;G Chapter 4</td>
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<td>3</td>
<td>Efficient portfolios</td>
<td>E&amp;G Chapter 5</td>
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<td>CAPM</td>
<td>E&amp;G Chapter 13</td>
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<td>Fama &amp; French, The CAPM: theory and evidence</td>
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<td></td>
<td></td>
<td>Amenc and Le Sourd, Portfolio theory and performance</td>
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<td>analysis</td>
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<td>5</td>
<td>Non-standard forms of the CAPM and the APT</td>
<td>E&amp;G Chapter 14, 15</td>
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<td>6</td>
<td>Future directions of risk management practices and issues,</td>
<td>CAS, Enterprise risk management (ERP)</td>
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<td>with emphasis on ethical issues and awareness in the practice of risk</td>
<td>Nocco and Stulz, Enterprise risk management</td>
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<td>management</td>
<td>Rajan, Financial development</td>
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<td></td>
<td></td>
<td>GARP, Code of conduct</td>
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<tr>
<td>7</td>
<td>Final Exam</td>
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</table>
PART A: Academic Matters, Section AII: New Courses

New course to be offered by the Bert W. Wasserman Department of Economics and Finance

AII.10.1 Finance 9852 The Measurement and Management of Market Risk I

This is the first in a sequence of two courses on financial market risk. This course covers key aspects of market risk, with a special emphasis on the concept, measurement, and control of market risks by financial institutions in their risk management programs. Students will be introduced to models in current use, and will analyze the assumptions and mathematical background underlying them in depth. Topics covered include: the stochastic nature of securities returns, estimation approaches of value at risk (VaR), issues of portfolio aggregation, and correlation measurement and forecasting.

1.5 hours, 1.5 credits

Prerequisites: Fin 9851, Mth 9841, and Fin 9795, and a minimum GPA of 3.0 (B average) in Fin 9851, Mth 9841, and Fin 9795.

Explanation. This will be a 1.5-credit course in the MS in Financial Risk Management program (EMS-FRM), now in the process of development. All students in the program will take this course in cohort format. This course will be open to students in the EMS-FRM program in the second trimester of the program.

This course will cover the field of market risk, one of the most important areas in management of risk in financial institutions. This subject utilizes statistical theory intensively, as well as knowledge of the financial exposures of complex financial institutions.

The attached syllabus includes several readings that are coordinated with the required study materials for candidates of the Financial Risk Manager (FRM) certification of the Global Association of Risk Managers (GARP). This professional association is our partner in this program. Their reading list is updated annually, and we expect that the syllabus of this course will be modified annually as well. This applies to all of the courses in this program.

Submitted for approval by the Executive Committee of the Bert W. Wasserman Department of Economics and Finance on January 9, 2012. A sample syllabus is attached.
Baruch College  
The Zicklin School of Business  
The Bert W. Wasserman Department of Economics and Finance  
Finance 9852  
Measurement and Management of Market Risk I

Professor: tba  
Office: tba  
Phone: tba  
Hours: tba  
Email: tba

Course Description

This is the first in a sequence of two courses on financial market risk. This course covers key aspects of market risk, with a special emphasis on the concept, measurement, and control of market risks by financial institutions in their risk management programs. Students will be introduced to models in current use, and will analyze the assumptions and mathematical background underlying them in depth. Topics covered include: the stochastic nature of securities returns, estimation approaches of value at risk (VaR), issues of portfolio aggregation, and correlation measurement and forecasting.

1.5 hours, 1.5 credits  
Prerequisites: Fin 9851, Mth 9841, and Fin 9795, and a minimum GPA of 3.0 (B average) in Fin 9851, Mth 9841, and Fin 9795

Learning Goals

The principal objective of this course is to provide students with the basic knowledge of value at risk (VaR), a foundational model in the practice of risk management. By the end of the course, students who complete this course should be able to:

- Formulate VaR values using state-of-the-art methodologies employed in leading financial firms. These include both parametric and non-parametric models.
- Apply VaR concepts to all key types of financial securities, including debt, foreign exchange, equities, derivatives, and portfolios.
- Have a thorough understanding of key assumptions that are made to develop VaR estimates, and be able to assess accurately what a given set of estimates does, or does not, convey.

These goals are specifically related to the learning goals of the MS in Financial Risk Management program, which are as follows:

1. Core knowledge of risk management. Students will master the core elements of risk management, including concepts of market, credit, and operational risk, and regulatory requirements. They will identify the underlying sources of financial and business risks;
formulate procedures to monitor and manage these risks; and be able to evaluate a firm’s compliance with regulatory requirements

2. **Technical and analytical skills.** Students will develop technical and analytical skills needed to manage risks in large, complex financial institutions. They will formulate quantitative tools, models, and strategies to manage and control these risks in large financial institutions

3. **Leadership and communication.** Students will formulate appropriate risk management strategies that take into account a comprehensive evaluation of the overall risk exposures of the enterprise; communicate risk management strategies clearly and persuasively to a firm’s top management, both orally and in writing.

4. **Ethical awareness.** Students will develop a deep understanding of ethical issues in all phases of risk management. They will identify circumstances in which the firm’s managers are most likely to face ethical challenges; and evaluate how professional codes of conduct in financial risk management are designed to guide managers’ actions in the presence of ethical challenges.

**Textbooks**

- Chapter 2 Measures of Financial Risk
- Chapter 3 Estimating Market Risk Measures
- Chapter 4 Non-parametric Approaches
- Chapter 5 Appendix—Modeling Dependence: Correlations and Copulas
- Chapter 6 Parametric Approaches (I)
- Chapter 7 Parametric Approaches (II): Extreme Value

- Chapter 2 Quantifying Volatility in VaR Models
- Chapter 3 Putting VaR to Work

**Additional Reading**


**Review Readings**

- Chapter 10 Introduction to Market Risk
Chapter 11 Sources of Market Risk
Chapter 12 Hedging Linear Risk

Exams, Homework, and Assignments

Homework problems will be assigned.

There will be a midterm and a final exam. The final exam will cover all of the chapters, but will focus mostly on the chapters covered after the midterm exam.

Students may bring to each exam a single sheet, 8.5 by 11 inches, on one side only, with handwritten notes and equations. You will need one of the following calculators on the exam: the HP 12C, HP 12C Platinum, TI BAII Plus, or the TI BAII Plus Professional. Laptop computers are not allowed on the exams. You must have your own calculator for this purpose. Be sure to check its battery, and that you know how to use your calculator before you take the exams. Calculator user manuals are not allowed in the exams.

*Cell phones may not be used during exams for any reason. In particular, they cannot be used as calculators.*

Your course grade will be based on your exams and homework assignments. These percentages will be used to form your overall course average:

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</table>
| 1     | Measures of market risk  
Consideration of ethical, legal, and regulatory aspects of market and systemic risks | Dowd, Chapter 2                                          |
| 2     | Measuring and computing VaR                                         | Dowd, Chapter 3  
Allen, Boudoukh & Saunders, Chapter 2, 3  
Hong, Knight, Satchell, & Scherer                       |
| 3     | Non-parametric approaches                                          | Dowd, Chapter 4                                          |
| 4     | Modeling dependence                                                | Dowd, Chapter 5                                          |
| 5     | Parametric approaches (I)                                           | Dowd, Chapter 6                                          |
| 6     | Parametric approaches (II)                                          | Dowd, Chapter 7                                          |
| 7     | Final Exam                                                          | Review Reading: Jorion *Handbook*                        |
PART A: Academic Matters, Section AII: New Courses

New course to be offered by the Bert W. Wasserman Department of Economics and Finance

AII.10.1 Finance 9853 The Measurement and Management of Market Risk II

This course is a continuation of Finance 9852, The Measurement and Management of Market Risk I, and extends students’ knowledge of the concepts and measures of market risk. From this foundation, students will learn how financial institutions actively use these models to manage risk, and how these techniques are tested and evaluated in practice. This course will also include an analysis of the implications of market risk for regulatory capital requirements. Specific topics include: estimation of value at risk for derivatives and fixed income securities with embedded optionality, and evaluations using techniques of stress testing, and Monte Carlo and scenario analyses.

1.5 hours, 1.5 credits
Prerequisite: Fin 9852

Explanation. This will be a 1.5-credit course in the MS in Financial Risk Management program (EMS-FRM), now in the process of development. All students in the program will take this course in cohort format. This course will be open to students in the EMS-FRM program in the second trimester of the program.

This course will cover the field of market risk, one of the most important areas in management of risk in financial institutions. This subject utilizes statistical theory intensively, as well as knowledge of the financial exposures of complex financial institutions.

The attached syllabus includes several readings that are coordinated with the required study materials for candidates of the Financial Risk Manager (FRM) certification of the Global Association of Risk Managers (GARP). This professional association is our partner in this program. Their reading list is updated annually, and we expect that the syllabus of this course will be modified annually as well. This applies to all of the courses in this program.

Submitted for approval by the Executive Committee of the Bert W. Wasserman Department of Economics and Finance on January 9, 2012. A sample syllabus is attached.
Baruch College
The Zicklin School of Business
The Bert W. Wasserman Department of Economics and Finance
Finance 9853
Measurement and Management of Market Risk II

Professor: tba
Office: tba
Phone: tba
Hours: tba
Email: tba

Course Description

This course is a continuation of Finance 9852, The Measurement and Management of Market Risk I, and extends students’ knowledge of the concepts and measures of market risk. From this foundation, students will learn how financial institutions actively use these models to manage risk, and how these techniques are tested and evaluated in practice. This course will also include an analysis of the implications of market risk for regulatory capital requirements. Specific topics include: estimation of value at risk for derivatives and fixed income securities with embedded optionality, and evaluations using techniques of stress testing, and Monte Carlo and scenario analyses.

1.5 hours, 1.5 credits
Prerequisite: Fin 9852

Learning Goals

The principal objective of this course is to build upon and extend the concept of VaR from the prior course, Finance 9852. By the end of the course, students should be able to:

- Identify factors that affect the VaR of a financial position or portfolio. This process is known as VaR mapping.
- Apply assessment applications, including back-testing and stress testing of VaR estimates and financial portfolios, to evaluate the goodness of the estimates.
- Formulate appropriate strategies of extending the application of VaR methodologies to operational risk and non-tradable loans.

These goals are specifically related to the learning goals of the MS in Financial Risk Management program, which are as follows:

1. **Core knowledge of risk management.** Students will master the core elements of risk management, including concepts of market, credit, and operational risk, and regulatory requirements. They will identify the underlying sources of financial and business risks;
formulate procedures to monitor and manage these risks; and be able to evaluate a firm’s compliance with regulatory requirements

2. **Technical and analytical skills.** Students will develop technical and analytical skills needed to manage risks in large, complex financial institutions. They will formulate quantitative tools, models, and strategies to manage and control these risks in large financial institutions

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**Textbooks**

- Chapter 6  Backtesting VaR
- Chapter 7  Portfolio Risk: Analytical Methods
- Chapter 11 VaR Mapping
- Chapter 14 Stress Testing
- Chapter 17 VaR and Risk Budgeting in Investment Management

- Chapter 14  Estimating Liquidity Risks
- Chapter 16  Model Risk

- Chapter 4  Extending the VaR Approach to Non-tradable Loans
- Chapter 5  Extending the VaR Approach to Operational Risks

**Review Readings**

- Chapter 13 Nonlinear Risk: Options
- Chapter 14 Modeling Risk Factors
- Chapter 15 VaR Methods
Exams, Homework, and Assignments

Homework problems will be assigned.

There will be a midterm and a final exam. The final exam will cover all of the chapters, but will focus mostly on the chapters covered after the midterm exam.

Students may bring to each exam a single sheet, 8.5 by 11 inches, on one side only, with handwritten notes and equations. You will need one of the following calculators on the exam: the HP 12C, HP 12C Platinum, TI BAII Plus, or the TI BAII Plus Professional. Laptop computers are not allowed on the exams. You must have your own calculator for this purpose. Be sure to check its battery, and that you know how to use your calculator before you take the exams. Calculator user manuals are not allowed in the exams.

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<td>1</td>
<td>Backtesting VaR</td>
<td>Jorion, Chapter 6</td>
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<tr>
<td>2</td>
<td>VaR mapping</td>
<td>Jorion, Chapter 11</td>
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<td>3</td>
<td>Stress testing</td>
<td>Jorion, Chapter 14</td>
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<td>4</td>
<td>Using VaR for active risk management, with special emphasis on ethical issues and awareness in implementation and practice</td>
<td>Jorion, Chapters 7, 17</td>
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<td>5</td>
<td>Liquidity and model risks</td>
<td>Dowd, Chapters 14, 16</td>
</tr>
<tr>
<td>6</td>
<td>Extending VaR to operational risk and non-tradable loans</td>
<td>Allen, Boudoukh &amp; Saunders, Chapters 4, 5</td>
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<td>7</td>
<td>Final Exam</td>
<td>Review Reading: Jorion <em>Handbook</em></td>
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PART A: Academic Matters, Section AII: New Courses

New course to be offered by the Bert W. Wasserman Department of Economics and Finance

AII.10.1 Finance 9854  The Measurement and Management of Credit Risk I
This is the first in a sequence of two courses on modern credit analysis and management. This course focuses on the analysis of the risks of individual loans and borrowers. It covers several analytical models of credit risk, including both structural and reduced form models, among others. It deals with estimation and testing of the models, with a view toward characterizing and illustrating current and evolving industry standards and practices.
1.5 hours, 1.5 credits
Prerequisites: Fin 9895, Fin 9891, Fin 9784, and Fin 9852, and a minimum GPA of 3.0 in Fin 9895, Fin 9891, Fin 9784, and Fin 9852.

Explanation. This will be a 1.5-credit course in the MS in Financial Risk Management program (EMS-FRM), now in the process of development. All students in the program will take this course in cohort format, and this course will be open to students in the third trimester of the EMS-FRM program.

This course will cover modern methods of credit risk analysis and management. In view of the financial crisis, increasing attention is devoted to better understanding and analysis of sources and consequences of credit risk. A key motivation is to improve on traditional methods of credit assessment which are often “backward looking,” and to develop methods that utilize current market prices that are inherently “forward looking.” Many of these models require very innovative uses of new forms of data on borrower characteristics and available forms of market assessments.

The attached syllabus includes several readings that are coordinated with the required study materials for candidates of the Financial Risk Manager (FRM) certification of the Global Association of Risk Managers (GARP). This professional association is our partner in this program. Their reading list is updated annually, and we expect that the syllabus of this course will be modified annually as well. This applies to all of the courses in this program.

Submitted for approval by the Executive Committee of the Bert W. Wasserman Department of Economics and Finance on January 9, 2012. A sample syllabus is attached.
Baruch College  
The Zicklin School of Business  
The Bert W. Wasserman Department of Economics and Finance  
Finance 9854  
Measurement and Management of Credit Risk I

Professor: tba  
Office: tba  
Phone: tba  
Hours: tba  
Email: tba

Course Description

This is the first in a sequence of two courses on modern credit analysis and management. This course focuses on the analysis of the risks of specific loans and borrowers. It covers several analytical models of credit risk, including both structural and reduced form models, among others. It deals with estimation and testing of the models, with a view toward characterizing and illustrating current and evolving industry standards and practices.

1.5 hours, 1.5 credits

Prerequisites: Fin 9895, Fin 9891, Fin 9784, and Fin 9852, and a minimum GPA of 3.0 in Fin 9895, Fin 9891, Fin 9784, and Fin 9852.

Learning Goals

The principal objective of this course is define and characterize credit risks of individual borrowers. By the end of the course, students should be able to:

- Explain the role of faulty credit analyses in the financial crisis of 2008
- Derive credit risk premia implicit in yield curves of risky debt securities
- Analyze and assess the predictive value of historical mortality rate experience
- Apply option methodology to estimates of credit risks
- Distinguish between, and apply, structural and reduced-form models of credit risks.

These goals are specifically related to the learning goals of the MS in Financial Risk Management program, which are as follows:

1. Core knowledge of risk management. Students will master the core elements of risk management, including concepts of market, credit, and operational risk, and regulatory requirements. They will identify the underlying sources of financial and business risks; formulate procedures to monitor and manage these risks; and be able to evaluate a firm’s compliance with regulatory requirements

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**Textbook**


**Additional Readings**

- Chapter 2 External and Internal Ratings
- Chapter 3 Default Risk: Quantitative Methodologies
- Chapter 4 Loss Given Default

- Chapter 4 Loan Portfolios and Expected Loss
- Chapter 5 Unexpected Loss
- Chapter 6 Portfolio Effects: Risk Contributions and Unexpected Losses

**Review Readings**

- Chapter 18 Introduction to Credit Risk
- Chapter 19 Measuring Actuarial Default Risk
- Chapter 20 Measuring Default Risk from Market Prices
Exams, Homework, and Assignments

Homework problems will be assigned.

There will be a midterm and a final exam. The final exam will cover all of the chapters, but will focus mostly on the chapters covered after the midterm exam.

Students may bring to each exam a single sheet, 8.5 by 11 inches, on one side only, with handwritten notes and equations. You will need one of the following calculators on the exams: the HP 12C, HP 12C Platinum, TI BAII Plus, or the TI BAII Plus Professional. Laptop computers are not allowed on the exams. You must have your own calculator for this purpose. Be sure to check its battery, and that you know how to use your calculator before you take the exams. Calculator user manuals are not allowed in the exams.

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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Background of the financial meltdown of 2008, basics of credit ratings Ethical issues of the crisis will be analyzed in depth.</td>
<td>Saunders &amp; Allen, Chapters 1-3 de Servigny and Renault, Chapter 2</td>
</tr>
<tr>
<td>2</td>
<td>Moody’s KMV model</td>
<td>Saunders &amp; Allen, Chapter 4 Ong, Chapters 4-6</td>
</tr>
<tr>
<td>3</td>
<td>Reduced form models</td>
<td>Saunders &amp; Allen, Chapter 5</td>
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<td>4</td>
<td>Other credit models</td>
<td>Saunders &amp; Allen, Chapter 6 BCBS, Studies on credit risk</td>
</tr>
<tr>
<td>5</td>
<td>Loss given default (LGD)</td>
<td>Saunders &amp; Allen, Chapter 7 de Servigny and Renault, Chapters 3, 4</td>
</tr>
<tr>
<td>6</td>
<td>Credit risk of portfolios and issues of changes in correlations</td>
<td>Saunders &amp; Allen, Chapter 8</td>
</tr>
<tr>
<td>7</td>
<td>Final Exam</td>
<td>Review Reading: Jorion Handbook</td>
</tr>
</tbody>
</table>
PART A: Academic Matters, Section AII: New Courses

New course to be offered by the Bert W. Wasserman Department of Economics and Finance

AII.10.1 Finance 9855 The Measurement and Management of Credit Risk II
This course is a continuation of Finance 9855, The Measurement and Management of Credit Risk I. It extends the analysis of individual loans and borrowers to issues of the measurement and analysis of groups and portfolios of loans. It covers loan concentration risk, risk models based on ratings migrations, models appropriate for the evaluation of insurance firm risks, and the analytical derivation and use of risk-adjusted return on capital. This course also introduces students to the concepts and uses of credit derivatives.
1.5 hours, 1.5 credits
Prerequisite: Fin 9854

Explanation. This will be a 1.5-credit course in the MS in Financial Risk Management program (EMS-FRM), now in the process of development. All students in the program will take this course in cohort format, and this course will be open to students in the third trimester of the EMS-FRM program.

This course will cover modern methods of credit risk analysis and management. In view of the financial crisis, increasing attention is devoted to better understanding and analysis of sources and consequences of credit risk. A key motivation is to improve on traditional methods of credit assessment which are often “backward looking,” and to develop methods that utilize current market prices that are inherently “forward looking.” Many of these models require very innovative uses of new forms of data on borrower characteristics and available forms of market assessments.

The attached syllabus includes several readings that are coordinated with the required study materials for candidates of the Financial Risk Manager (FRM) certification of the Global Association of Risk Managers (GARP). This professional association is our partner in this program. Their reading list is updated annually, and we expect that the syllabus of this course will be modified annually as well. This applies to all of the courses in this program.

Submitted for approval by the Executive Committee of the Bert W. Wasserman Department of Economics and Finance on January 9, 2012. A sample syllabus is attached.
Baruch College  
The Zicklin School of Business  
The Bert W. Wasserman Department of Economics and Finance  
Finance 9855  
Measurement and Management of Credit Risk II

Professor: tba  
Office: tba  
Phone: tba  
Hours: tba  
Email: tba

Course Description

This course is a continuation of Finance 9855, The Measurement and Management of Credit Risk I. It extends the analysis of individual loans and borrowers to issues of the measurement and analysis of groups and portfolios of loans. It covers loan concentration risk, risk models based on ratings migrations, models appropriate for the evaluation of insurance firm risks, and the analytical derivation and use of risk-adjusted return on capital. This course also introduces students to the concepts and uses of credit derivatives.

1.5 hours, 1.5 credits  
Prerequisite: Fin 9854

Learning Goals

The principal objective of this course is to extend the analysis of credit risks covered in Finance 9854, especially to credit derivatives. By the end of the course, students should be able to:

- Apply concepts of credit ratings transition and migration to VaR analyses of credit risk
- Formulate a firm’s risk-adjusted rate of return on capital (RAROC) and evaluate its meaning and implications for capital adequacy.
- Design and analyze the structure of credit default swaps (CDS), and be able to value them and understand the key sources of risk inherent in them.

These goals are specifically related to the learning goals of the MS in Financial Risk Management program, which are as follows:

1. **Core knowledge of risk management.** Students will master the core elements of risk management, including concepts of market, credit, and operational risk, and regulatory requirements. They will identify the underlying sources of financial and business risks; formulate procedures to monitor and manage these risks; and be able to evaluate a firm’s compliance with regulatory requirements.

2. **Technical and analytical skills.** Students will develop technical and analytical skills needed to manage risks in large, complex financial institutions. They will formulate
quantitative tools, models, and strategies to manage and control these risks in large financial institutions

3. **Leadership and communication.** Students will formulate appropriate risk management strategies that take into account a comprehensive evaluation of the overall risk exposures of the enterprise; communicate risk management strategies clearly and persuasively to a firm’s top management, both orally and in writing.

4. **Ethical awareness.** Students will develop a deep understanding of ethical issues in all phases of risk management. They will identify circumstances in which the firm’s managers are most likely to face ethical challenges; and evaluate how professional codes of conduct in financial risk management are designed to guide managers’ actions in the presence of ethical challenges.

**Textbook**


**Additional Readings**

- Chapter 22 Credit Risk
- Chapter 23 Credit Derivatives

Stulz, *Risk Management & Derivatives*.
- Chapter 18 Credit Risks and Credit Derivatives


“Studies on credit risk concentration: an overview of the issues and a synopsis of the results from the Research Task Force project” (Basel Committee on Banking Supervision Publication, November 2006).

**Review Readings**

- Chapter 21 Credit Exposure
- Chapter 22 Credit Derivatives and Structured Products
- Chapter 23 Managing Credit Risk
Exams, Homework, and Assignments

Homework problems will be assigned.

There will be a midterm and a final exam. The final exam will cover all of the chapters, but will focus mostly on the chapters covered after the midterm exam.

Students may bring to each exam a single sheet, 8.5 by 11 inches, on one side only, with handwritten notes and equations. You will need one of the following calculators on the exams: the HP 12C, HP 12C Platinum, TI BAII Plus, or the TI BAII Plus Professional. Laptop computers are not allowed on the exams. You must have your own calculator for this purpose. Be sure to check its battery, and that you know how to use your calculator before you take the exams. Calculator user manuals are not allowed in the exams.

Cell phones may not be used during exams for any reason. In particular, they cannot be used as calculators.

Your course grade will be based on your exams and homework assignments. These percentages will be used to form your overall course average:

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<td>Total</td>
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Please be sure that your cell phone is turned off during class.

Academic Integrity

The Department of Economics and Finance fully supports Baruch College's policy on Academic Honesty, which states, in part:

Academic dishonesty is unacceptable and will not be tolerated. Cheating, forgery, plagiarism and collusion in dishonest acts undermine the college's educational mission and the students' personal and intellectual growth. Baruch students are expected to bear individual responsibility for their work and to uphold the ideal of academic integrity. Any student who attempts to compromise or devalue the academic process will be sanctioned.

Additional information can be found at

http://www.baruch.cuny.edu/academic/academic_honesty.html
Outline of Class Sessions

Each class has two sessions of 75 minutes each, with a 15-minute break in between.

Subject to Change

<table>
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<tr>
<th>Class</th>
<th>Topic</th>
<th>Reading Assignments</th>
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<tbody>
<tr>
<td>1</td>
<td>Creditmetrics</td>
<td>Saunders &amp; Allen, Chapter 9</td>
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<td>2</td>
<td>Stress testing</td>
<td>Saunders &amp; Allen, Chapter 10</td>
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<td>3</td>
<td>RAROC and credit concentration</td>
<td>Saunders &amp; Allen, Chapter 11</td>
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<td></td>
<td></td>
<td>Basel Committee on Banking Supervision</td>
</tr>
<tr>
<td>4</td>
<td>Credit Derivatives</td>
<td>Saunders &amp; Allen, Chapter 12</td>
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<td>5</td>
<td>Credit Derivatives</td>
<td>Duffie, Innovations in credit risk transfer</td>
</tr>
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<td></td>
<td></td>
<td>Stulz, Chapter 18</td>
</tr>
<tr>
<td>6</td>
<td>Credit Derivatives</td>
<td>Hull, Chapters 22, 23</td>
</tr>
<tr>
<td></td>
<td>Issues of ethics in credit analysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>and assignment of ratings.</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Final Exam</td>
<td>Review Reading: Jorion <em>Handbook</em></td>
</tr>
</tbody>
</table>
PART A: Academic Matters, Section AII: New Courses

New course to be offered by the Bert W. Wasserman Department of Economics and Finance

AII.10.1 Finance 9856  The Measurement and Management of Risks in Operations and Information Technology
This course introduces students to the nature of operational and information technology, and the risks inherent in these operations. These reflect risks to a firm associated with technical and human problems, as well as more specific problems associated with complex forms of informational technology. Students will evaluate the nature and potential severity of these risks, as well as innovative approaches to measuring and managing them.
1.5 hours, 1.5 credits
Prerequisites:  Fin 9895, Fin 9891, Fin 9784, and Fin 9852, and a minimum GPA of 3.0 in Fin 9895, Fin 9891, Fin 9784, and Fin 9852.

Explanation. This will be a 1.5-credit course in the MS in Financial Risk Management program (EMS-FRM), now in the process of development. All students in the program will take this course in cohort format, and this course will be open, in general, to students in the third trimester of the EMS-FRM program.

This course covers two areas of increasing concern in risk management. There are many forms of operational risks, including large numbers of relatively small losses due to fraud and computer failures, as well as larger, less frequent losses associated with rogue traders. The frequency and severity of these risks is of increasing focus of financial institutions and regulators, and is an area of increasing concern among all.

The attached syllabus includes several readings that are coordinated with the required study materials for candidates of the Financial Risk Manager (FRM) certification of the Global Association of Risk Managers (GARP). This professional association is our partner in this program. Their reading list is updated annually, and we expect that the syllabus of this course will be modified annually as well. This applies to all of the courses in this program.

Submitted for approval by the Executive Committee of the Bert W. Wasserman Department of Economics and Finance on January 9, 2012. A sample syllabus is attached.
Baruch College
The Zicklin School of Business
The Bert W. Wasserman Department of Economics and Finance
Finance 9856
Measurement and Management of Risks in Operations and Information Technology

Professor: tba
Office: tba
Phone: tba
Hours: tba
Email: tba

Course Description

This course introduces students to the nature of operational and information technology, and the risks inherent in these operations. These reflect risks to a firm associated with technical and human problems, as well as more specific problems associated with complex forms of informational technology. Students will evaluate the nature and potential severity of these risks, as well as innovative approaches to measuring and managing them.

1.5 hours, 1.5 credits
Prerequisites: Fin 9895, Fin 9891, Fin 9784, and Fin 9852, and a minimum GPA of 3.0 in Fin 9895, Fin 9891, Fin 9784, and Fin 9852.

Learning Goals

The principal objective of this course is to introduce students to the nature and sources of all forms of operational risks. By the end of the course, students should be able to:

- Analyze how rogue traders have perpetrated massive frauds and failures, and evaluate the ethical dimensions of these failures.
- Identify sources of risk that result from modern informational technology and from counterparties in a wide range of financial arrangements, especially credit default swaps.
- Evaluate the potential of new approaches for measuring and quantifying operational risks that are now under development.
- Evaluate the implications of operational risks for estimates of capital adequacy requirements.

These goals are specifically related to the learning goals of the MS in Financial Risk Management program, which are as follows:

1. **Core knowledge of risk management.** Students will master the core elements of risk management, including concepts of market, credit, and operational risk, and regulatory requirements. They will identify the underlying sources of financial and business risks;
formulate procedures to monitor and manage these risks; and be able to evaluate a firm’s compliance with regulatory requirements

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**Readings**


Chapter 18  Operational Risk


Review Readings

Chapter 24 Operational Risk

Exams, Homework, and Assignments

Homework problems will be assigned.

There will be a midterm and a final exam. The final exam will cover all of the chapters, but will focus mostly on the chapters covered after the midterm exam.

Students may bring to each exam a single sheet, 8.5 by 11 inches, on one side only, with handwritten notes and equations. You will need one of the following calculators on the exam: the HP 12C, HP 12C Platinum, TI BAII Plus, or the TI BAII Plus Professional. Laptop computers are not allowed on the exams. You must have your own calculator for this purpose. Be sure to check its battery, and that you know how to use your calculator before you take the exams. Calculator user manuals are not allowed in the exams.

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Academic Integrity

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> Academic dishonesty is unacceptable and will not be tolerated. Cheating, forgery, plagiarism and collusion in dishonest acts undermine the college’s educational mission and the students’ personal and intellectual growth. Baruch students are expected to bear
individual responsibility for their work and to uphold the ideal of academic integrity. Any student who attempts to compromise or devalue the academic process will be sanctioned.

Additional information can be found at

http://www.baruch.cuny.edu/academic/academic_honesty.html

Outline of Class Sessions

Each class has two sessions of 75 minutes each, with a 15-minute break in between.

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<th>Topic</th>
<th>Reading Assignments</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Operational risk and rogue traders, and the ethical issues underlying their actions.</td>
<td>Hull, Chapter 18</td>
</tr>
<tr>
<td>2</td>
<td>Counterparty risk</td>
<td>Canabarro and Duffie, Measuring counterparty risk IMF Global Stability Report, OTC derivatives</td>
</tr>
<tr>
<td>3</td>
<td>Operational risk capital modeling</td>
<td>Chaudhury, Operational risk capital modelling</td>
</tr>
<tr>
<td>4</td>
<td>Measuring operational risks</td>
<td>Cope, Mignola, Antonini, and Ugocciobi, Challenges in measuring operational risk DeFontnouville, Resengran, and Jordan, Alternative operational risk modeling</td>
</tr>
<tr>
<td>5</td>
<td>Failure mechanics at dealer banks</td>
<td>Duffie, Failure mechanics of dealer banks</td>
</tr>
<tr>
<td>6</td>
<td>The flash crash</td>
<td>Staffs of the CFTC and SEC, Findings regarding the market events of May 6, 2010</td>
</tr>
<tr>
<td>7</td>
<td>Final Exam</td>
<td>Review Reading: Jorion <em>Handbook</em></td>
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</tbody>
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Subject to Change
PART A: Academic Matters, Section AII: New Courses

New course to be offered by the Bert W. Wasserman Department of Economics and Finance

AII.10.1 Finance 9857 The Measurement and Management of Risks in Investments

This course covers risks inherent in the management of investments by major institutional investors, including mutual funds, pension funds, hedge-funds, and private equity firms. Against the background of classical portfolio theory, this course examines the special investment structures and practices of major institutional investors, and explores the ways in which each has unique investment aims and is subject to unique forms of investment risks. This analysis also takes into account the regulatory framework of each of the main types of institutional investors, and the implications for risk management and analysis for them.

1.5 hours, 1.5 credits
Prerequisites: Fin 9895, Fin 9891, Fin 9784, and Fin 9852, and a minimum GPA of 3.0 in Fin 9895, Fin 9891, Fin 9784, and Fin 9852.

Explanation. This will be a 1.5-credit course in the MS in Financial Risk Management program (EMS-FRM), now in the process of development. All students in the program will take this course in cohort format, and this course will be open to students in the third trimester of the EMS-FRM program.

This course covers all forms of investment risks. The study and analysis of these risks, aside from traditional forms of portfolio diversification, is growing, especially since the recent expansion of the hedge fund industry results in the expansion of these risks.

The attached syllabus includes several readings that are coordinated with the required study materials for candidates of the Financial Risk Manager (FRM) certification of the Global Association of Risk Managers (GARP). This professional association is our partner in this program. Their reading list is updated annually, and we expect that the syllabus of this course will be modified annually as well. This applies to all of the courses in this program.

Submitted for approval by the Executive Committee of the Bert W. Wasserman Department of Economics and Finance on January 9, 2012. A sample syllabus is attached.
Baruch College  
The Zicklin School of Business  
The Bert W. Wasserman Department of Economics and Finance  
Finance 9857  
Measurement and Management of Risks in Investments

Professor: tba  
Office: tba  
Phone: tba  
Hours: tba  
Email: tba

Course Description

This course covers risks inherent in the management of investments by major institutional investors, including mutual funds, pension funds, hedge-funds, and private equity firms. Against the background of classical portfolio theory, this course examines the special investment structures and practices of major institutional investors, and explores the ways in which each has unique investment aims and is subject to unique forms of investment risks. This analysis also takes into account the regulatory framework of each of the main types of institutional investors, and the implications for risk management and analysis for them.

1.5 hours, 1.5 credits

Prerequisites: Fin 9895, Fin 9891, Fin 9784, and Fin 9852, and a minimum GPA of 3.0 in Fin 9895, Fin 9891, Fin 9784, and Fin 9852.

Learning Goals

The principal objective of this course is to introduce students to forms of investment risk that extend beyond classical portfolio theory and that apply to many modern forms of financial investing. By the end of the course, students should be able to:

- Assess and evaluate risks borne by investors in hedge funds, pension funds, and private equity firms, as well as risks borne by the managers and owners of those firms.
- Explain the existence of Bernie Madoff’s Ponzi scheme, and how he eluded investors and regulators for such a long period of time.
- Assess regulatory responses to that fraud.
- Identify key factors needed in risk budgeting.

These goals are specifically related to the learning goals of the MS in Financial Risk Management program, which are as follows:

1. **Core knowledge of risk management.** Students will master the core elements of risk management, including concepts of market, credit, and operational risk, and regulatory requirements. They will identify the underlying sources of financial and business risks;
formulate procedures to monitor and manage these risks; and be able to evaluate a firm’s compliance with regulatory requirements

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**Readings**

- Chapter 14 Portfolio Construction
- Chapter 17 Performance Analysis

- Chapter 17 Risk Monitoring and Performance Measurement

- Chapter 5 Individual Hedge Fund Strategies


- Chapter 6 Risk Budgeting for Pension Funds and Investment Managers Using VaR, by Michelle McCarthy

**Review Readings**

- Chapter 16 Portfolio Management
- Chapter 17 Hedge Fund Risk Management
- Chapter 26 Firm-Wide Risk Management

**Exams, Homework, and Assignments**

Homework problems will be assigned.

There will be a midterm and a final exam. The final exam will cover all of the chapters, but will focus mostly on the chapters covered after the midterm exam.

Students may bring to each exam a single sheet, 8.5 by 11 inches, on one side only, with handwritten notes and equations. You will need one of the following calculators on the exam: the HP 12C, HP 12C Platinum, TI BAII Plus, or the TI BAII Plus Professional. Laptop computers are not allowed on the exams. You must have your own calculator for this purpose. Be sure to check its battery, and that you know how to use your calculator before you take the exams. Calculator user manuals are not allowed in the exams.

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<td>1</td>
<td>Risk management in investments</td>
<td>Grinold and Kahn, Portfolio construction and performance analysis</td>
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<td>2</td>
<td>Risk management in investments</td>
<td>Litterman et al., Risk monitoring Khandani and Lo, Hedge funds</td>
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<td>3</td>
<td>Hedge funds</td>
<td>Jaeger, Hedge funds Lo, Risk management for hedge funds</td>
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<td>4</td>
<td>Fraud: Bernie Madoff This discussion will include an analysis of the ethical issues of this crisis.</td>
<td>Dimmock and Gerken, Detecting fraud</td>
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<td>5</td>
<td>Pension funds</td>
<td>Rahl, Risk budgeting</td>
</tr>
<tr>
<td>6</td>
<td>Private equity</td>
<td>Kaplan and Stromberg, Leveraged buyouts and private equity</td>
</tr>
<tr>
<td>7</td>
<td>Final Exam</td>
<td>Review Reading: Jorion Handbook</td>
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PART A: Academic Matters, Section AII: New Courses

New course to be offered by the Bert W. Wasserman Department of Economics and Finance

AII.10.1 Finance 9858  Implications of Corporate Governance, Regulation, and Ethics for Risk Management

The course is devoted to issues of corporate governance, and helps students develop a deep understanding of their legal and ethical responsibilities as individuals, managers, and corporate officers. This course is largely based on cases. Specific issues covered include the responsibilities of businesses to the natural and governmental environments in which they operate, the roles and responsibilities of members of the firm’s board of directors, corporate reform, and the impact of board on the firm’s decision-making culture.

1.5 hours, 1.5 credits

Prerequisites: Fin 9770 or departmental permission

Explanation. This will be a 1.5-credit course in the MS in Financial Risk Management program (EMS-FRM), now in the process of development. All students in the program will take this course in cohort format, and this course will be open to students in the third trimester of the EMS-FRM program.

Although ethical issues are addressed in all courses in the EMS-FRM program in some manner, this course focuses almost exclusively on these issues. The course uses real-life cases that involve major challenges facing the firm’s executive leaders. Many famous business failures are covered, including Royal Dutch Shell in Nigeria and Enron. The concluding case deals with business and ethical perspectives of Johnson & Johnson’s success in dealing with the Tylenol Case. Students will evaluate the ethical and business issues facing these firms, will address those issues from the perspective of the firm’s top executives, and will draw conclusions about effective forms of corporate governance.

The attached syllabus includes several readings that are coordinated with the required study materials for candidates of the Financial Risk Manager (FRM) certification of the Global Association of Risk Managers (GARP). This professional association is our partner in this program. Their reading list is updated annually, and we expect that the syllabus of this course will be modified annually as well. This applies to all of the courses in this program.

Submitted for approval by the Executive Committee of the Bert W. Wasserman Department of Economics and Finance on January 9, 2012. A sample syllabus is attached.
Baruch College
The Zicklin School of Business
The Bert W. Wasserman Department of Economics and Finance
Finance 9858
Implications of Corporate Governance, Regulation, and Ethics for Risk Management

Professor: tba
Office: tba
Phone: tba
Hours: tba
Email: tba

Course Description

The course is devoted to issues of corporate governance, and helps students develop a deep understanding of their legal and ethical responsibilities as individuals, managers, and corporate officers. This course is largely based on cases. Specific issues covered include the responsibilities of businesses to the natural and governmental environments in which they operate, the roles and responsibilities of members of the firm’s board of directors, corporate reform, and the impact of board on the firm’s decision-making culture.

1.5 hours, 1.5 credits
Prerequisites: Fin 9770 or departmental permission

Learning Goals

The principal objective of this course is to explore issues of corporate governance and ethical awareness in financial firms. By the end of the course, students should be able to:

- Explain current arrangements by which modern corporations are governed
- Analyze in compelling detail several of the most serious failures of corporate governance in recent history, including cases such as those of Royal Dutch Shell, Enron, and Worldcom.
- Compare and contrast such failures to a success, such as that of the recovery of Tylenol following the Tylenol poisonings in 1982.
- Identify the many ways in which employees and managers in all types of businesses face ethical choices.
- Develop a deep understanding of how people in firms face ethical issues on a daily basis in all aspects of corporate life.

These goals are specifically related to the learning goals of the MS in Financial Risk Management program, which are as follows:

1. **Core knowledge of risk management.** Students will master the core elements of risk management, including concepts of market, credit, and operational risk, and regulatory requirements. They will identify the underlying sources of financial and business risks;
formulate procedures to monitor and manage these risks; and be able to evaluate a firm’s compliance with regulatory requirements

2. **Technical and analytical skills.** Students will develop technical and analytical skills needed to manage risks in large, complex financial institutions. They will formulate quantitative tools, models, and strategies to manage and control these risks in large financial institutions.

3. **Leadership and communication.** Students will formulate appropriate risk management strategies that take into account a comprehensive evaluation of the overall risk exposures of the enterprise; communicate risk management strategies clearly and persuasively to a firm’s top management, both orally and in writing.

4. **Ethical awareness.** Students will develop a deep understanding of ethical issues in all phases of risk management. They will identify circumstances in which the firm’s managers are most likely to face ethical challenges; and evaluate how professional codes of conduct in financial risk management are designed to guide managers’ actions in the presence of ethical challenges.

**Textbook**


**Additional Readings**


**Review Readings**

Chapter 27  Legal Issues

**Exams, Homework, and Assignments**

Homework problems and readings will be assigned, and there will be a final exam.

Students may bring to each exam. You will need one of the following calculators on the exam: the HP 12C, HP 12C Platinum, TI BAII Plus, or the TI BAII Plus Professional. Laptop computers are
not allowed on the exams. You must have your own calculator for this purpose. Be sure to check its battery, and that you know how to use your calculator before you take the exams. Calculator user manuals are not allowed in the exams.

*Cell phones may not be used during exams for any reason. In particular, they cannot be used as calculators.*

Your course grade will be based on your exams and homework assignments. These percentages will be used to form your overall course average:

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</tr>
</tbody>
</table>

Please be sure that your cell phone is turned off during class.

**Academic Integrity**

The Department of Economics and Finance fully supports Baruch College’s policy on Academic Honesty, which states, in part:

> Academic dishonesty is unacceptable and will not be tolerated. Cheating, forgery, plagiarism and collusion in dishonest acts undermine the college’s educational mission and the students’ personal and intellectual growth. Baruch students are expected to bear individual responsibility for their work and to uphold the ideal of academic integrity. Any student who attempts to compromise or devalue the academic process will be sanctioned.

Additional information can be found at

[http://www.baruch.cuny.edu/academic/academic_honesty.html](http://www.baruch.cuny.edu/academic/academic_honesty.html)
# Outline of Class Sessions

Each class has two sessions of 75 minutes each, with a 15-minute break in between.

*Subject to Change*

<table>
<thead>
<tr>
<th>Class</th>
<th>Topic</th>
<th>Reading Assignments</th>
</tr>
</thead>
</table>
| 1     | Background on corporate governance issues and ethical values at the senior executive level | Mallin, Chapters 1-3  
| 2     | Business and the environment, both natural and governmental | Mallin, Chapters 4-7  
HBS Case: Royal Dutch Shell in Nigeria (A)  
HBS Note: Responding to Market Failures  
HBS Case: Royal Dutch Shell in Nigeria (B) |
| 3     | Governance and the role of management | Mallin, Chapters 8-9  
HBS Case: Innovation Corrupted: The Rise and Fall of Enron (A)  
HBS Case: Innovation Corrupted: The Rise and Fall of Enron (B) |
| 4     | Corporate reform | HBS Case: Restoring Trust at Worldcom  
HBS Note: Corporate Reform in the United States |
| 5     | Compliance systems | HBS Case: Salomon Brothers (A)  
HBS Case: Salomon Brothers (B)  
HBS Note: Compliance Programs |
| 6     | Corporate culture and ethical values, and decision making: The Tylenol Case | HBS Case: James Burke: A Career in American Business (A)  
HBS Case: James Burke: A Career in American Business (B) |
| 7     | Leadership, personal, and ethical values | Parable of the Sadhu  
Letter from Birmingham Jail, Martin Luther King, 1963 |
## Appendix H

### Program Sequence

<table>
<thead>
<tr>
<th>Term: Trimester 1</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Course Number &amp; Title</strong></td>
<td><strong>Credits</strong></td>
</tr>
<tr>
<td>Fin 9851 Classical Foundations of Financial Risk Management</td>
<td>1.5</td>
</tr>
<tr>
<td>Mth 9841 Statistics for Finance</td>
<td>3.0</td>
</tr>
<tr>
<td>Fin 9795 Debt Instruments and Markets</td>
<td>3.0</td>
</tr>
<tr>
<td><strong>Term credit total</strong></td>
<td><strong>7.5</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>Course Number &amp; Title</strong></td>
<td><strong>Credits</strong></td>
</tr>
<tr>
<td>Fin 9895 Special Topics in Corporate Finance: Futures and Forward Markets</td>
<td>1.5</td>
</tr>
<tr>
<td>Fin 9891 Special Topics in Investments: Options Markets</td>
<td>1.5</td>
</tr>
<tr>
<td>Fin 9784 Management of Financial Institutions</td>
<td>3.0</td>
</tr>
<tr>
<td>Fin 9852 Measurement and Management of Market Risk I</td>
<td>1.5</td>
</tr>
<tr>
<td><strong>Term credit total</strong></td>
<td><strong>7.5</strong></td>
</tr>
<tr>
<td>Term: Trimester 3</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td></td>
</tr>
<tr>
<td>Course Number &amp; Title</td>
<td>Credits</td>
</tr>
<tr>
<td>Fin 9853 Measurement and Management of Market Risk II</td>
<td>1.5</td>
</tr>
<tr>
<td>Fin 9854 Measurement and Management of Credit Risk I</td>
<td>1.5</td>
</tr>
<tr>
<td>Fin 9855 Measurement and Management of Credit Risk II</td>
<td>1.5</td>
</tr>
<tr>
<td>Fin 9856 Measurement and Management of Risks in Operations and Information Technology</td>
<td>1.5</td>
</tr>
<tr>
<td>Fin 9857 Measurement and Management of Risks in Investments</td>
<td>1.5</td>
</tr>
<tr>
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</table>

<table>
<thead>
<tr>
<th>Term: Trimester 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Number &amp; Title</td>
</tr>
<tr>
<td>Fin 9788 International Corporate Finance</td>
</tr>
<tr>
<td>Fin 9858 Implications of Corporate Governance, Regulation, and Ethics for Risk Management</td>
</tr>
<tr>
<td>Fin 9790 Seminar in Finance (Capstone Course)</td>
</tr>
<tr>
<td>Term credit total</td>
</tr>
</tbody>
</table>

**Program Totals**
Identify any comprehensive, culminating elements (e.g., thesis or examination), including course number if applicable: None 30
# Appendix I

## Full Time Faculty of the Department of Economics and Finance Who Are Available for This Program

<table>
<thead>
<tr>
<th>Faculty Member</th>
<th>Program Courses to be Taught</th>
<th>Percent Time to Program</th>
<th>Highest Earned Degree &amp; Discipline</th>
<th>Additional Qualifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prof. Ozgur Demirtas</td>
<td>Fin 9851 Classical Foundations of Financial Risk Management</td>
<td>0%</td>
<td>PhD, Boston College, Finance</td>
<td></td>
</tr>
<tr>
<td>Prof. Ashok Vora</td>
<td></td>
<td></td>
<td>PhD, Northwestern University, Finance</td>
<td></td>
</tr>
<tr>
<td>Prof. Jae Lee</td>
<td></td>
<td></td>
<td>PhD, CUNY, Economics</td>
<td></td>
</tr>
<tr>
<td>Prof. Barry Ma</td>
<td>Mth 9841 Statistics for Finance</td>
<td>0%</td>
<td>PhD, Stanford University, Economics</td>
<td></td>
</tr>
<tr>
<td>Prof. Sebastiano Manzan</td>
<td></td>
<td></td>
<td>PhD, Amsterdam University, Economics</td>
<td></td>
</tr>
<tr>
<td>Prof. Christopher Hessel</td>
<td>Fin 9795 Debt Instruments and Markets</td>
<td>0%</td>
<td>PhD, New York University, Finance</td>
<td></td>
</tr>
<tr>
<td>Prof. Terrence Martell</td>
<td>Fin 9895 Special Topics in Corporate Finance: Futures and Forward Markets</td>
<td>0%</td>
<td>PhD, Penn State University, Finance</td>
<td>Saxe Distinguished Professor of Finance, Director of the Weissman Center for International Business</td>
</tr>
<tr>
<td>Prof. Avner Wolf</td>
<td>Fin 9891 Special Topics in Investments: Options Markets</td>
<td>0%</td>
<td>PhD, Columbia University, Finance</td>
<td></td>
</tr>
<tr>
<td>Prof. Joel Rentzler</td>
<td></td>
<td></td>
<td>PhD, NYU, Finance</td>
<td></td>
</tr>
<tr>
<td>Prof. Gayle DeLong</td>
<td>Fin 9784 Management of Financial Institutions</td>
<td>0%</td>
<td>PhD, New York University, Finance &amp; Int’l Bus.</td>
<td></td>
</tr>
<tr>
<td>Prof. Gwendolyn Webb</td>
<td></td>
<td></td>
<td>PhD, New York University, Finance</td>
<td></td>
</tr>
<tr>
<td>Prof. Joseph Onochie</td>
<td>Fin 9852 Measurement and Management of Market Risk I</td>
<td>0%</td>
<td>PhD, University of New Orleans, Finance</td>
<td>Academic Director, EMBA</td>
</tr>
<tr>
<td>Prof. Liuen Wu</td>
<td>Fin 9853 Measurement and Management of Market Risk II</td>
<td>0%</td>
<td>PhD, Chinese Academy of Sciences, Chemistry</td>
<td></td>
</tr>
<tr>
<td>Faculty Member</td>
<td>Program Courses to be Taught</td>
<td>Percent Time to Program</td>
<td>Highest Earned Degree &amp; Discipline</td>
<td>Additional Qualifications</td>
</tr>
<tr>
<td>---------------------------</td>
<td>--------------------------------------------------------------------------------------------</td>
<td>-------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------</td>
</tr>
<tr>
<td>Prof. Linda Allen</td>
<td>Fin 9854 Measurement and Management of Credit Risk I</td>
<td>0%</td>
<td>PhD, New York University, Economics</td>
<td>William F. Aldinger Professor of Banking and Finance</td>
</tr>
<tr>
<td></td>
<td>Fin 9855 Measurement and Management of Credit Risk II</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prof. Christos Giannikos</td>
<td>Fin 9856 Measurement and Management of Risks in Operations and Informational Technology</td>
<td>0%</td>
<td>PhD, Columbia University, Finance</td>
<td></td>
</tr>
<tr>
<td>Prof. Lin Peng</td>
<td>Fin 9857 Measurement and Management of Risks in Investments</td>
<td></td>
<td>PhD, Duke University, Finance</td>
<td></td>
</tr>
<tr>
<td>Prof. Gayle Delong</td>
<td>Fin 9788 International Corporate Finance</td>
<td>0%</td>
<td>PhD, New York University, Finance &amp; Int’l Bus</td>
<td>Chair, Department of Economics and Finance</td>
</tr>
<tr>
<td>Prof. Kishore Tandon</td>
<td></td>
<td></td>
<td>PhD, University of Pittsburgh, Finance</td>
<td></td>
</tr>
<tr>
<td>Prof. Jay Dahya</td>
<td>Fin 9858 Implications of Corporate Governance, Regulation, and Ethics for Risk Management</td>
<td>0%</td>
<td>PhD, Dundee University, Finance</td>
<td></td>
</tr>
<tr>
<td>Prof. Sonali Hazarika</td>
<td></td>
<td></td>
<td>PhD, University of North Carolina, Chapel Hill, Finance</td>
<td></td>
</tr>
<tr>
<td>Prof. Ashok Vora</td>
<td>Fin 9790 Seminar in Finance (Capstone Course)</td>
<td>0%</td>
<td>PhD, Northwestern University, Finance</td>
<td>Academic Director, EMS-FRM Program</td>
</tr>
<tr>
<td>Prof. Gwendolyn Webb</td>
<td></td>
<td>43%</td>
<td>PhD, New York University, Finance</td>
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</table>
## Appendix J

### Five-Year Financial Projections for the MS Program in Financial Risk Management

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Summary of Projected New Resources and Expenses for the MS Program in Financial Risk Management</td>
<td>93</td>
</tr>
<tr>
<td>2</td>
<td>Summary of Projected Revenues for the MS Program in Financial Risk Management</td>
<td>94</td>
</tr>
<tr>
<td>3</td>
<td>Five-Year Projections of New Resources and Expenses for the MS Program in Financial Risk Management</td>
<td>95</td>
</tr>
<tr>
<td>4</td>
<td>Five-Year Projections of Revenues for the MS Program in Financial Risk Management</td>
<td>98</td>
</tr>
</tbody>
</table>
Table J-1
Summary of Projected New Resources and Expenses for the MS Program in Financial Risk Management

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Academic Year</td>
<td>Academic Year</td>
<td>Academic Year</td>
<td>Academic Year</td>
<td>Academic Year</td>
</tr>
<tr>
<td>Full Time Faculty</td>
<td>$135,000</td>
<td>$137,700</td>
<td>$140,454</td>
<td>$143,263</td>
<td>$146,128</td>
</tr>
<tr>
<td>Part Time Faculty</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Full Time Staff</td>
<td>$199,500</td>
<td>$203,490</td>
<td>$207,560</td>
<td>$211,711</td>
<td>$215,945</td>
</tr>
<tr>
<td>Part Time Staff</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Library (Includes Staffing)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Equipment</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Laboratories</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Supplies &amp; Expenses (OTPS)</td>
<td>$123,000</td>
<td>$143,820</td>
<td>$165,424</td>
<td>$168,732</td>
<td>$172,107</td>
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<tr>
<td>Capital Expenditures</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td>Other</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td>Total</td>
<td>$457,500</td>
<td>$485,010</td>
<td>$513,437</td>
<td>$523,706</td>
<td>$534,180</td>
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</table>

Notes:
Detailed projections are in Table J-3
All dollar amounts are projected to inflate at a rate of 2% per year.
Faculty expenses include fringe benefits.
"New resources" include resources engendered specifically by the proposed program.
### Table J-2
Summary of Projected Revenues for the MS Program in Financial Risk Management

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tuition Revenue</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>From Existing Sources</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>From New Sources</td>
<td>$504,000</td>
<td>$642,600</td>
<td>$786,542</td>
<td>$802,273</td>
<td>$818,319</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$504,000</td>
<td>$642,600</td>
<td>$786,542</td>
<td>$802,273</td>
<td>$818,319</td>
</tr>
<tr>
<td><strong>State Appropriation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>From Existing Sources</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>From New Sources</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Other Revenue</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>From Existing Sources</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>From New Sources</td>
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<tr>
<td><strong>Total</strong></td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$504,000</td>
<td>$642,600</td>
<td>$786,542</td>
<td>$802,273</td>
<td>$818,319</td>
</tr>
</tbody>
</table>

**Notes:**
Detailed projections are in Table J-4
### Table J-3

**Five-Year Projections of New Resources and Expenses for the MS Program in Financial Risk Management**

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Full Time Faculty Replacement Costs</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Current Full Time Faculty Overload (include Summer)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>New Full Time Faculty Base Salary</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>New Full Time Faculty Overload (include Summer)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>New Faculty Re-assigned Time</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Full Time Employee Fringe Benefits (33.0%)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>No. of credits</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Estimated cost per credit, with 2% inflation</td>
<td>$4,500</td>
<td>$4,590</td>
<td>$4,682</td>
<td>$4,775</td>
<td>$4,871</td>
</tr>
<tr>
<td>Total (Links to Full-Time Faculty on Program Expenses Worksheet)</td>
<td>$135,000</td>
<td>$137,700</td>
<td>$140,454</td>
<td>$143,263</td>
<td>$146,128</td>
</tr>
</tbody>
</table>

| Part Time Faculty Actual Salaries            | $0       | $0       | $0       | $0       | $0       |
| Part Time Faculty Actual Fringe Benefits (10%) | $0       | $0       | $0       | $0       | $0       |
| Total (Links to Part-Time Faculty on Program Expenses Worksheet) | $0       | $0       | $0       | $0       | $0       |

<table>
<thead>
<tr>
<th>Staff</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Time Staff Base Salary</td>
<td>$150,000</td>
<td>$153,000</td>
<td>$156,060</td>
<td>$159,181</td>
<td>$162,365</td>
</tr>
<tr>
<td>Full Time Staff Fringe Benefits (33%)</td>
<td>$49,500</td>
<td>$50,490</td>
<td>$51,500</td>
<td>$52,530</td>
<td>$53,580</td>
</tr>
<tr>
<td>Total</td>
<td>$199,500</td>
<td>$203,490</td>
<td>$207,560</td>
<td>$211,711</td>
<td>$215,945</td>
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</tbody>
</table>
### Part Time Staff Base Salary

<table>
<thead>
<tr>
<th>Graduate Assistants</th>
<th>$0</th>
<th>$0</th>
<th>$0</th>
<th>$0</th>
<th>$0</th>
<th>$0</th>
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</thead>
<tbody>
<tr>
<td>Student Hourly</td>
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<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td>Part Time Employee Fringe Benefits (10.0%)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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</table>

*(Links to Part-Time Staff on Program Expenses Worksheet)*

### Library

<table>
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<tr>
<th>Library Resources</th>
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<th>$0</th>
<th>$0</th>
<th>$0</th>
<th>$0</th>
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<tr>
<td>Library Staff Full Time</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Full Time Staff Fringe Benefits (33%)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Library Staff Part Time</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Part Time Employee Fringe Benefits (10.0%)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
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</table>

*(Links to Library on Program Expenses Worksheet)*

### Equipment

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<th>Computer Hardware</th>
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*(Links to Equipment on Program Expenses Worksheet)*

### Laboratories

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*(Links to Laboratories on Program Expenses Worksheet)*
### Supplies and Expenses (OTPS)

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(Links to Supplies on Program Expenses Worksheet)

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### Capital Expenditures

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(Links to Capital Expenditures on Program Expenses Worksheet)

### Other

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(Links to Other on Program Expenses Worksheet)

### Overall Total Expenses

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<td>Year 3</td>
<td>Year 4</td>
<td>Year 5</td>
</tr>
<tr>
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<tr>
<td><strong>Existing Full Time Students, In NY State</strong></td>
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<tr>
<td>Number of Majors (No. of existing full time in-state students)</td>
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<tr>
<td>Tuition Income (Rate per credit inflates at 2% per year)</td>
<td>$5,130</td>
<td>$5,233</td>
<td>$5,337</td>
<td>$5,444</td>
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<tr>
<td>Total Tuition</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td>Student Fees (Annual program fees other than standard CUNY fees)</td>
<td>$0</td>
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<td>Total Instate Tuition &amp; Fees</td>
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<tr>
<td><strong>Existing Full Time Students, Out of NY State</strong></td>
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<tr>
<td>Number of Majors (No. of existing full time out-of-state students)</td>
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<td>Tuition Income (Rate per credit inflates at 2% per year)</td>
<td>$13,800</td>
<td>$14,076</td>
<td>$14,358</td>
<td>$14,645</td>
<td>$14,938</td>
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<td>Student Fees (Annual program fees other than standard CUNY fees)</td>
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<td>Total Fees</td>
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<td>$0</td>
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<tr>
<td>Total Out of State Tuition &amp; Fees</td>
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<td><strong>Total Existing Full Time Tuition Revenue</strong></td>
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### Existing Part Time Students, In NY State

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Majors</td>
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<td>0</td>
<td>0</td>
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<td>0</td>
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<tr>
<td>Total Enrolled Credits</td>
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<td>Student Fees</td>
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<tr>
<td>Total Instate Tuition &amp; Fees</td>
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### Existing Part Time Students, Out of NY State

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</thead>
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<tr>
<td>Total Enrolled Credits</td>
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<tr>
<td>Tuition Income</td>
<td>$460</td>
<td>$469</td>
<td>$479</td>
<td>$488</td>
<td>$498</td>
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<tr>
<td>Total Tuition</td>
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</tr>
<tr>
<td>Student Fees</td>
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</tr>
<tr>
<td>Total Fees</td>
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<tr>
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### Total Existing Part Time Tuition Revenues

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<th>Year 4</th>
<th>Year 5</th>
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<tbody>
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### Total Existing Revenues

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(Links to Revenue Spreadsheet)
### Tuition & Fees from New Students

#### New Full Time Students, In NY State

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<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Majors</td>
<td>12</td>
<td>15</td>
<td>18</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>Tuition Income</td>
<td>$5,130</td>
<td>$5,233</td>
<td>$5,337</td>
<td>$5,444</td>
<td>$5,553</td>
</tr>
<tr>
<td>Total Tuition</td>
<td>$61,560</td>
<td>$78,489</td>
<td>$96,071</td>
<td>$97,992</td>
<td>$99,952</td>
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<td>Student Fees</td>
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<td>$37,607</td>
<td>$38,360</td>
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<td>$504,000</td>
<td>$642,600</td>
<td>$786,542</td>
<td>$802,273</td>
<td>$818,319</td>
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</table>

#### Number of Majors (No. of new full time out-of-state students)

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition Income</td>
<td>$13,800</td>
<td>$14,076</td>
<td>$14,358</td>
<td>$14,645</td>
<td>$14,938</td>
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<tr>
<td>Student Fees</td>
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<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td>Total Fees</td>
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<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td>Total Out of State Tuition &amp; Fees</td>
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#### Total New Full Time Tuition Revenue

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<th>Year 4</th>
<th>Year 5</th>
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<tbody>
<tr>
<td>Total New Full Time Tuition Revenue</td>
<td>$504,000</td>
<td>$642,600</td>
<td>$786,542</td>
<td>$802,273</td>
<td>$818,319</td>
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### New Part Time Students, In NY State

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<td>Tuition Income (Rate per credit inflate at 2% per year)</td>
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<tr>
<td>Student Fees (Annual program fees other than standard CUNY fees)</td>
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<td>$0</td>
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<td>$0</td>
</tr>
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<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td>Total Instate Tuition &amp; Fees</td>
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### New Part Time Students, Out of NY State

<table>
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<th>2</th>
<th>3</th>
<th>4</th>
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<td>0</td>
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<tr>
<td>Total Enrolled Credits</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Tuition Income (Rate per credit inflate at 2% per year)</td>
<td>$460</td>
<td>$469</td>
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<td>Total Tuition</td>
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<td>$0</td>
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<tr>
<td>Total Out of State Tuition &amp; Fees</td>
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### Total New Part Time Revenues

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### Total New Revenues

(Links to Revenue Spreadsheet)

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<th>2</th>
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<tr>
<td></td>
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<td>Year 2</td>
<td>Year 3</td>
<td>Year 4</td>
<td>Year 5</td>
</tr>
<tr>
<td>------------------------</td>
<td>--------</td>
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</tr>
<tr>
<td>State revenues from existing sources</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>State Budget Appropriations from Existing Sources</strong></td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>(Links to Revenue Spreadsheet)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>State revenues from new sources</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>State Budget Appropriations from New Sources</strong></td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>(Links to Revenue Spreadsheet)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Other Revenue From Existing Sources</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>(Links to Revenue Spreadsheet)</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Other Revenue New</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>(Links to Revenue Spreadsheet)</td>
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</tbody>
</table>

For years 2 - 5, include continuing resources from previous years

<table>
<thead>
<tr>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
</tbody>
</table>

(Links to Revenue Spreadsheet)
## Appendix K
### Internal Assessment Plan

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Learning Goals of the EMS-FRM Program</td>
<td>104</td>
</tr>
<tr>
<td>2</td>
<td>When the Assessments Will Take Place</td>
<td>105</td>
</tr>
<tr>
<td>3</td>
<td>Preliminary Guidelines for the Assessment</td>
<td>109</td>
</tr>
<tr>
<td>Learning Goal</td>
<td>Description of Learning Goal</td>
<td></td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
</tbody>
</table>
| 1. Core knowledge of risk management  | Students will master the core elements of risk management, including concepts of market, credit, and operational risk, and regulatory requirements. They will also master concepts of statistics, financial securities, and the management of financial institutions that form the foundation of risk management needs and processes. Students will:   
  - identify the underlying sources of financial and business risks   
  - formulate procedures to monitor and manage these risks   
  - be able to evaluate a firm’s compliance with regulatory requirements  |
| 2. Technical and analytical skills    | Students will develop technical and analytical skills needed to manage risks in large, complex financial institutions. Students will:                                                                                             
  - formulate quantitative tools, models, and strategies to manage and control these risks in large financial institutions                                                                                                           |
| 3. Leadership and communication      | Students will be able to implement appropriate risk management strategies that take into account a comprehensive evaluation of the overall risk exposures of the enterprise. Students will:                                           
  - formulate appropriate risk management strategies that take into account a comprehensive evaluation of the overall risk exposures of the enterprise.   
  - communicate risk management strategies clearly and persuasively to a firm’s top management, both orally and in writing.                                                                                          |
| 4. Ethical awareness                 | Students will develop a deep understanding of ethical issues in all phases of risk management. Students will:                                                                                                              
  - identify circumstances in which the firm’s managers are most likely to face ethical challenges.                                                                                                                    
  - evaluate how professional codes of conduct in financial risk management are designed to guide managers’ actions in the presence of ethical challenges.                                                     |
### Learning Goal 1. Core knowledge of risk management

Students will master the core elements of risk management, including concepts of market, credit, and operational risk, and regulatory requirements. They will also master concepts of statistics, financial securities, and the management of financial institutions that form the foundation of risk management needs and processes.

<table>
<thead>
<tr>
<th>Learning Objective</th>
<th>Courses in Which Assessment Will Take Place</th>
<th>Student Output/Examination Format</th>
<th>Trimester in which Assessment Will Take Place</th>
</tr>
</thead>
</table>
| 1. Identify the underlying sources of financial and business risks | Fin 9795 Debt Instruments and Markets  
Fin 9784 Management of Financial Institutions | Selected exam questions in Fin 9795 and Fin 9784 | Trimesters 1 and 2 |
| 2. Formulate procedures to monitor and manage these risks | Fin 9852 Measurement and Management of Market Risk  
Fin 9853 Measurement and Management of Credit Risk  
Fin 9854 Measurement and Management of Risks in Operations, Investments, and Hedge Funds | Selected exam questions in each of the relevant courses | Trimesters 2 and 3 |
| 3. Be able to evaluate a firm’s compliance with regulatory requirements | Fin 9784 Management of Financial Institutions  
Fin 9852 Measurement and Management of Market Risk | Selected exam questions in these two courses | Trimester 2 |
### Learning Goal 2. Technical and analytical skills

Students will develop technical and analytical skills needed to manage risks in large, complex financial institutions.

<table>
<thead>
<tr>
<th>Learning Objective</th>
<th>Courses in Which Assessment Will Take Place</th>
<th>Student Output/Examination Format</th>
<th>Trimester in which Assessment Will Take Place</th>
</tr>
</thead>
</table>
| 1. Formulate quantitative tools, models, and strategies to manage and control these risks in large financial institutions. | Mth 9841 Statistics for Finance  
Fin 9852 Measurement and Management of Market Risk  
Fin 9853 Measurement and Management of Credit Risk  
Fin 9854 Measurement and Management of Risks in Operations, Investments, and Hedge Funds  
Fin 9895 Special Topics in Corporate Finance: Futures and Forward Markets  
Fin 9891 Special Topics in Investments: Options Markets | Selected exam questions in three of the relevant courses | Trimesters 1 and 2 |
Learning Goal 3. Leadership and communication

Students will be able to implement appropriate risk management strategies that take into account a comprehensive evaluation of the overall risk exposures of the enterprise.

<table>
<thead>
<tr>
<th>Learning Objective</th>
<th>Courses in Which Assessment Will Take Place</th>
<th>Student Output/Examination Format</th>
<th>Trimester in which Assessment Will Take Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Formulate appropriate risk management strategies that take into account a comprehensive evaluation of the overall risk exposures of the enterprise.</td>
<td>Fin 9790 Seminar in Finance (Capstone Course)</td>
<td>Case analysis in the capstone seminar course</td>
<td>Trimesters 3 and 4</td>
</tr>
<tr>
<td>2. Communicate risk management strategies clearly and persuasively to a firm’s top management, both orally and in writing.</td>
<td>Fin 9790 Seminar in Finance (Capstone Course)</td>
<td>Presentation of case analysis in the capstone seminar course</td>
<td>Trimester 4</td>
</tr>
</tbody>
</table>
Learning Goal 4. Ethical awareness

Students will develop a deep understanding of ethical issues in all phases of risk management.

<table>
<thead>
<tr>
<th>Learning Objective</th>
<th>Courses in Which Assessment Will Take Place</th>
<th>Student Output/Examination Format</th>
<th>Trimester in which Assessment Will Take Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Identify circumstances in which the firm’s managers are most likely to face ethical challenges</td>
<td>Fin 9855 Implications of Corporate Governance, Regulation, and Ethics for Risk Management</td>
<td>Case analysis in the corporate governance course</td>
<td>Trimester 4</td>
</tr>
<tr>
<td>2. Evaluate how professional codes of conduct in financial risk management are designed to guide managers’ actions in the presence of ethical challenges.</td>
<td>Fin 9855 Implications of Corporate Governance, Regulation, and Ethics for Risk Management</td>
<td>Case analysis in the corporate governance course</td>
<td>Trimester 4</td>
</tr>
</tbody>
</table>
Table 3: Preliminary Guidelines for the Assessments

Learning Goal 1. Core knowledge of risk management

Students will master the core elements of risk management, including concepts of market, credit, and operational risk, and regulatory requirements. They will also master concepts of statistics, financial securities, and the management of financial institutions that form the foundation of risk management needs and processes.

<table>
<thead>
<tr>
<th>Learning Objective</th>
<th>3. Exceeded Expectations</th>
<th>2. Met Expectations</th>
<th>1. Failed to Meet Expectations</th>
<th>Score*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Identify the underlying sources of financial and business risks</td>
<td>Be able to identify most key sources of financial and business risks.</td>
<td>Be able to identify some key sources of financial and business risks.</td>
<td>Be able to identify just a few key sources of financial and business risks.</td>
<td></td>
</tr>
<tr>
<td>2. Formulate procedures to monitor and manage these risks.</td>
<td>Be able to evaluate most key risks and design appropriate strategies.</td>
<td>Be able to evaluate some key risks and design appropriate strategies.</td>
<td>Be able to evaluate just a few key risks and design appropriate strategies.</td>
<td></td>
</tr>
<tr>
<td>3. Be able to evaluate a firm’s compliance with regulatory requirements</td>
<td>Be able to test and evaluate the key issues in compliance with regulatory requirements.</td>
<td>Be able to test and evaluate some of the key issues in compliance with regulatory requirements.</td>
<td>Be able to test and evaluate only a few of the key issues in compliance with regulatory requirements.</td>
<td></td>
</tr>
</tbody>
</table>

Comments *Mark N/A if not applicable
Learning Goal 2. Technical and analytical skills

Students will develop technical and analytical skills needed to manage risks in large, complex financial institutions.

<table>
<thead>
<tr>
<th>Learning Objective</th>
<th>3. Exceeded Expectations</th>
<th>2. Met Expectations</th>
<th>1. Failed to Meet Expectations</th>
<th>Score*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Formulate quantitative tools, models, and strategies to manage and control these risks in large financial institutions</td>
<td>Be able to formulate quantitative tools, models, and strategies very effectively.</td>
<td>Be able to formulate quantitative tools, models, and strategies somewhat effectively.</td>
<td>Be able to formulate quantitative tools, models, and strategies only in general terms.</td>
<td></td>
</tr>
</tbody>
</table>

Comments

*Mark N/A if not applicable
Learning Goal 3. Leadership and communication

Students will be able to implement appropriate risk management strategies that take into account a comprehensive evaluation of the overall risk exposures of the enterprise.

<table>
<thead>
<tr>
<th>Learning Objective</th>
<th>3. Exceeded Expectations</th>
<th>2. Met Expectations</th>
<th>1. Failed to Meet Expectations</th>
<th>Score*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Formulate appropriate risk management strategies that take into account a comprehensive evaluation of the overall risk exposures of the enterprise.</td>
<td>Be able to formulate comprehensive strategies that are effective.</td>
<td>Be able to formulate comprehensive strategies that are somewhat effective.</td>
<td>Be able to formulate comprehensive strategies that are only slightly effective.</td>
<td></td>
</tr>
<tr>
<td>2. Communicate risk management strategies clearly and persuasively to a firm’s top management, both orally and in writing.</td>
<td>Are able to articulate and communicate strategies very effectively.</td>
<td>Are able to articulate and communicate strategies somewhat effectively.</td>
<td>Are able to articulate and communicate strategies only slightly effectively.</td>
<td></td>
</tr>
</tbody>
</table>

Comments

*Mark N/A if not applicable
Learning Goal 4. Ethical awareness

Students will develop a deep understanding of ethical issues in all phases of risk management.

<table>
<thead>
<tr>
<th>Learning Objective</th>
<th>3. Exceeded Expectations</th>
<th>2. Met Expectations</th>
<th>1. Failed to Meet Expectations</th>
<th>Score*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Identify circumstances in which the firm’s managers are most likely to face ethical challenges</td>
<td>Be able to identify subtle as well as straightforward instances of ethical issues.</td>
<td>Be able to identify straightforward instances of ethical issues.</td>
<td>Be able to identify only the most straightforward instances of ethical issues.</td>
<td></td>
</tr>
<tr>
<td>2. Evaluate how professional codes of conduct in financial risk management are designed to guide managers’ actions in the presence of ethical challenges.</td>
<td>Be able to evaluate such codes of conduct very well.</td>
<td>Be able to evaluate such codes of conduct fairly well.</td>
<td>Be able to evaluate such codes of conduct only slightly well.</td>
<td></td>
</tr>
</tbody>
</table>

Comments *Mark N/A if not applicable
## Appendix L
### External Reviews

<table>
<thead>
<tr>
<th>Page</th>
<th>Description</th>
</tr>
</thead>
</table>
| 114  | Professor Michael Pagano, Ph.D.  
The Robert J. and Mary Ellen Darretta Endowed Chair in Finance  
Villanova University |
| 118  | The first five pages of Professor Pagano’s curriculum vita (out of 13 pages in total) |
| 123  | Professor Hassan Tehranian, Ph.D.  
Griffith Family Millennium Chair Professor  
Chairperson, Finance Department  
Carroll School of Management  
Boston College |
| 124  | The first six pages of Professor Tehranian’s curriculum vita (out of 17 pages in total) |
Evaluation Report Form for Program Proposals

<table>
<thead>
<tr>
<th>Institution:</th>
<th>Baruch College/CUNY</th>
</tr>
</thead>
</table>
| Evaluator:  | Professor Michael Pagano, PhD  
The Robert J. and Mary Ellen Darretta Endowed Chair in Finance  
Professor of Finance  
Villanova University |
| Program title: | Financial Risk Management |
| Degree title: | MS Executive Degree in Financial Risk Management |
| Date of evaluation: | March 6, 2012 |

It is my pleasure to review this proposal to initiate an Executive MS in Financial Risk Management at the Zicklin School of Business, Baruch College / CUNY.

As the Robert J. and Mary Ellen Darretta Endowed Chair in Finance at Villanova University, I have conducted numerous empirical and theoretical analyses related to various issues in market microstructure, financial institution management, risk management, international finance, fixed income, cost of capital estimation, and interest rate determination. These works have been published in numerous finance journals such as the Journal of Financial Economics, Journal of Financial Intermediation, Journal of Banking and Finance, and Journal of Financial Markets, among others. In addition, I currently serve as an associate editor of The Financial Review and sit on the editorial boards of the International Journal of Managerial Finance and Advances in Quantitative Analysis of Finance and Accounting. I have also been fortunate to serve as a guest editor of the International Journal of Managerial Finance, as well as the associate editor of the Review of Pacific Basin Financial Markets and Policies. My international appointments include acting as a Fulbright Scholar at the University of Costa Rica, as well as a visiting professor at the University of Otago in New Zealand and the American University of Rome. I have also been fortunate to receive awards for both teaching excellence and academic scholarship.

Prior to earning my doctorate and joining the Villanova University faculty, I spent over 10 years in the financial services industry. I also hold the Chartered Financial Analyst (CFA®) designation and have experience both in commercial lending activities at Citibank and in investment valuation analysis at a financial consulting firm, International Capital Markets Corp., as well as Reuters PLC. At Villanova University, I have participated in numerous college and university initiatives such as launching the Executive MBA program, the M.S. in Finance program, the Mid-Atlantic Research Conference in Finance (MARC), the Institute for Research in Advanced Financial Technology, and the award-winning Applied Finance Lab.

In addition to my duties at Villanova University, I serve as a member of FINRA’s Market Regulation Committee and I have been a consultant to several organizations including Deutsche Börse, Cantor Exchange, Citibank, Fidelity Investments, American Bankers Association, PaineWebber, Ortner, O’Brien, and Ortner Advisory Group, GTE Investments, Aqua America, and Bank Julius Baer. Lastly, I have been frequently asked to comment on financial institutions and
current market structure issues and have been quoted in various media sources such as the Wall Street Journal, New York Times, Financial Times, Associated Press, CNBC’s Squawk Box and Closing Bell, Bloomberg TV, PBS’s Nightly Business Report, Wall Street Journal Radio, Bloomberg Radio, CNN Radio, and National Public Radio.

Overall, based on my experience and review of the Executive M.S. in Financial Risk Management proposal, the school has the faculty, alumni, and student resources to fill an important need in terms of developing well-educated risk management professionals. I recommend its adoption without reservation.

I. Program

1. Assess program purpose, structure, and requirements as well as formal mechanisms for program administration and monitoring.

The purpose is to establish a M.S. degree in financial risk management, a field which has grown rapidly in the past 20 years. The field has matured intellectually in response to advances in finance theory, statistical modeling, and data management / information technology. In addition, the demand for well-trained risk managers has grown dramatically, particularly due to the recent financial crisis and subsequent increased regulation of the financial services industry. This proposed MS degree will help meet this demand in one of the most important financial capitals of the world (New York). This program consists of a large number of advanced finance course offerings. The current Finance faculty is of a sufficient size and possesses the requisite expertise to implement and monitor the program.

2. Comment on the special focus of this program, if any, as it relates to the discipline.

The proposed program has a strong focus and good depth within its courses to give students the necessary tools to understand the financial and operational risks facing modern corporations (both financial and non-financial firms). As noted, the recent crisis and current re-regulation of the financial services industry requires all firms, especially financial institutions, to manage financial risks more effectively. In turn, this has heightened the need for business professionals who are not only conversant but also proficient in modern risk management techniques so that financial risks related to interest rates, foreign currencies, equities, and commodities are properly managed.

3. Comment on the plans and expectations for continuing program development and self-assessment.

The program is well developed and pairs nicely with the existing M.S. and MBA curricula at the Zicklin School of Business. The faculty and ancillary resources are more than adequate to establish, assess, and expand this program.

4. Assess available support from related programs.

The staffing and financial resources appear to be reasonable and sufficient to implement the MS in
financial risk management degree. According to the financial projections, the program should be able to cover its costs in the first year and then by the fifth year, the program can generate a relatively healthy surplus which could then be re-invested in the program or used to fund other school initiatives. Given the popularity of the school’s existing risk management courses, the projections in terms of student head count and financial cash flows appear quite feasible for the school.

5. (Only for programs requiring master plan amendment.) What is the evidence of need and demand for the program locally, in the State, and in the field at large? What is the extent of occupational demand for graduates? What is the evidence that demand will continue?

As noted earlier, the general demand for risk management is growing rapidly and particularly in New York due to the numerous financial institutions that operate there. As many recruiting sources suggest, risk management (as well as the related area of compliance) are “growth industries” due to the recent crisis and the greater regulation which is being instituted in the crisis’ aftermath.

II. Faculty

6. Evaluate the faculty, individually and collectively, in regard to training, experience, research and publication, professional service, and recognition in the field.

The faculty is of very high quality, both individually and collectively, with many of them actively doing research in the area of financial risk management. In Appendix I of the proposal, there are 20 faculty listed as available to teach in this program. This list is comprised of an endowed chair (Prof. Allen), a research center director (Prof. Martell), and numerous faculty with degrees from excellent research institutions such as MIT, Stanford, Columbia, and NYU, among others. These faculty have also published in top-tier finance journals such as the Journal of Finance, Journal of Financial Economics, Review of Financial Studies, and the Journal of Banking & Finance.

7. Assess the faculty in terms of size and qualifications. What are plans for future staffing?

As noted in my response to item 6 above, the faculty has both sufficient size, depth, and qualifications to support the additional courses required to deliver this new M.S. degree. In addition, it appears the department is also hiring junior faculty who also have the requisite skills to teach in this program.

8. Evaluate credentials and involvement of adjunct and support faculty.

Based on the information provided, adjunct and support faculty appear to also be of high quality, although most (if not all) courses are intended to be taught by full-time faculty from within the department of economics and finance.

III. Resources

9. Comment on the adequacy of physical resources and facilities, e.g., library, computer, and
laboratory facilities; practica and internship sites; and support services for the program, including use of resources outside the institution.

Having visited Baruch College several times since the institution moved to its new building, I can state that the facilities and resources are first-class in all aspects.

10. (Only for programs requiring master plan amendment.) What is the institution's commitment to the program as demonstrated by the operating budget, faculty salaries, and the number of faculty lines relative to student numbers and workload.

As noted in Appendix J which contains the financial projections, the budget seems reasonable and realistic given the growing demand for risk management professionals. Thus, the commitment by the institution appears quite strong.

IV. Summary Comments and Additional Observations

11. Summarize the major strengths and weaknesses of the program as proposed with particular attention to feasibility of implementation and appropriateness of objectives for the degree offered. Include any further observations important to the evaluation of this program proposal and provide any recommendations for the proposed program.

The key strengths of the program are the high quality of its faculty and staff, as well as the numerous complementary and focused course offerings. Given the school’s location in New York, the proposed MS degree in financial risk management can become a leader within this niche. In addition, Baruch’s reputation / “brand” that is known for providing an affordable, good quality education can be considered another key strength. As for a weakness, the only potential one I can see is whether the department will have the flexibility to adapt its courses in “real-time” given its place in the larger, somewhat hierarchical organization of the CUNY system.

As indicated earlier, this program fills an important and growing need in financial education and the department has the requisite faculty and resources to implement this new MS degree. As an independent external reviewer, I wholly recommend the adoption of this program.
MICHAEL S. PAGANO, Ph.D., CFA
March 6, 2012
The Robert J. and Mary Ellen Darretta Endowed Chair in Finance

EDUCATION
Rutgers University Finance 1994 - 1999 Ph.D.
Rutgers University Finance 1995 - 1997 MBA
Fordham University Finance/Business Economics 1980 - 1984 BS

HONORS and GRANTS
Robert & M.E. Darretta Endowed Chair in Finance Villanova U. 2010
SFA Outstanding Paper in Int. Finance Award Southern Fin. Assoc. 2010
Visiting Professor of Finance U. of Otago (in N.Z.) 2007
Nasdaq Stock Market Educational Foundation Grant Nasdaq Stock Market 2006
Summer Research Support Grant Villanova University 2006 - 2009
SFA Outstanding Paper in Investments Award Southern Fin. Assoc. 2005
Silver Medal—Lybrand Best Paper Competition Inst. of Mgmt. Acctg. 2005
Outstanding Scholar Award Villanova University 2004 - 2005
Research Excellence Award Villanova University 2004
VITAL Minigrant Teaching Award Villanova University 2004
Critical Incident Teaching Award Villanova University 2003
U.S. Fulbright Scholarship (for Costa Rica) U.S. Fulbright Program 2002 - 2003
Summer Research Fellowship Villanova University 2001
Fisher-Long-Whitcomb Teaching Excellence Award Rutgers University 1998
Doctoral Excellence Fellowship Rutgers University 1994 - 1996
Special Achievement Award AIMR / CFA Institute 1992 - 1995
Business Economics Award for Excellence Fordham University 1984
Presidential Scholarship Fordham University 1984
Summa Cum Laude Fordham University 1984

REFEREED PUBLICATIONS


MICHAEL S. PAGANO, Ph.D., CFA

REFEREED PUBLICATIONS (continued)


MICHAEL S. PAGANO, Ph.D., CFA

REFEREE PUBLICATIONS (continued)


OTHER PUBLICATIONS


DISSERTATION
MICHAEL S. PAGANO, Ph.D., CFA

PAPERS UNDER REVIEW


WORKING PAPERS
“Risk, Uncertainty, and the Perceived Threat of Terrorist Attacks: The Advisory System that Cried Wolf?” Joint work with T.S. Strother.

“Main Bank Relationships and the Cost of Debt in Japan.” Joint work with S.H. Han and Y.S. Shin.

“Intraday Returns and Weekday Effects in the Dow Jones and Nasdaq Stock Indexes.” Joint work with H-C. Yu, and C-Y. Wu.


EDITORIAL BOARD RESPONSIBILITIES
Associate Editor, The Financial Review, 2010-present.


Editorial Board, Advances in Quantitative Analysis of Finance and Accounting, 2010-present.


CONFERENCE PROCEEDINGS


MICHAEL S. PAGANO, Ph.D., CFA

CONFERENCE PROCEEDINGS (continued)


REPRINTS OF PUBLICATIONS


INVITED RESEARCH PRESENTATIONS
Presented research papers during 2002-present by invitation at the FDIC, DePaul U., University of Otago (New Zealand), Fordham University, University of Delaware, U. of Mississippi, U. of Memphis, Lehigh U. (twice), Rutgers U. (twice), Drexel U., Hofstra U., and Temple U. Presented market microstructure research and served as a moderator or panelist at annual Baruch College Conferences during 2004-2006.

INVITED / CONTRIBUTED PIECES


Hassan Tehranian is the Griffith Millennium Chair in Finance at Boston College. He is also a Professor and Chairperson of Finance Department and Executive Director of Center for Asset Management at the Carroll School of Management at Boston College. Professor Tehranian received his BS degree from the Iranian Institute of Advanced Accounting and his MBA and Ph.D. degrees in Finance from the University of Alabama. Professor Tehranian is the founder of the Graduate Finance Program at Boston College (MSF and Ph.D.), which he served as the Executive Director from 1986 to 2002. In 1993, Professor Tehranian co-founded and served as the president of the American Institute of Advanced Finance (AIAF), a Boston-based CFA review program, which was acquired by Kaplan Educational Centers in 1999. He has taught CFA review courses for several years.


Professor Tehranian is currently an Associate Editor for several finance and economic journals. Dr. Tehranian is currently a member of the Financial Management Association, the American Finance Association, and the Western Finance Association. Professor Tehranian has extensive experience teaching executive courses and has been engaged in a variety of management consulting activities to local and national firms.
SUBJECT: Evaluation Report Form for MS in Entrepreneurship Proposal

It is my pleasure to review the proposal for the Zicklin School of Business, Baruch College, City University of New York to initiate a Master of Science Degree in Financial Risk Management. I have some familiarity with the school, since two of my former PhD students are current faculty. I have been there several times to visit them and collaborate on research with each one. This proposal offers great growth opportunities for Baruch College and is based on the student, faculty, and alumni resources currently available in your institution as well as leveraging an existing program.

I. Program

1. Assess program purpose, structure, and requirements as well as formal mechanisms for program administration and monitoring.

   The purpose is to establish a Master of Science Degree in Financial Risk Management. Following the recent financial crises, financial risk management is an area of significant and growing interest in the finance industry, especially in New York City.

   This is evidenced by a significant demand for advanced study in Risk Management across business student populations as well as numerous risk management conferences worldwide.

   The proposed new MS degree will accommodate this increase in demand of one of the most financial risk management cities in the world. This risk management program is comprised of both required and elective course offerings and can be adequately staffed and implemented by the current Bert W. Wasserman Department of Economics and Finance faculty.

2. Comment on the special focus of this program, if any, as it relates to the discipline.

   The proposed program has excellent depth within its major required courses. Further, the program is eclectic as it includes other areas such as Statistics for Finance, Debt Instruments and Markets, Management of Financial Institutions, International Corporate Finance, Implications of Corporate Governance, Regulation, and Ethics for Financial Management as well as a Seminar in Finance.

3. Comment on the plans and expectations for continuing program development and self-assessment.

   The Executive MS in Financial Risk Management program is well-developed and pairs nicely with Baruch College’s existing executive programs; it complements rather than duplicates them. The faculty and other resources are adequate to establish and build this program.
4. Assess available support from related programs.

The staffing and financial resources appear to be sufficient to implement the MS in Financial Risk Management.

5. (Only for programs requiring master plan amendment.) What is the evidence of need and demand for the program locally, in the State, and in the field at large? What is the extent of occupational demand for graduates? What is the evidence that demand will continue?

As previously stated, the demand for advanced degrees in Financial Risk Management has significantly increased, especially after recent Financial Crisis (as also documented in the Appendix C of this proposal).

I predict that this proposed MS in Financial Risk Management will be very successful based on the proposal document and the caliber of the faculty involved. The market in New York City is enormous and Baruch College can leverage itself in the New York City market easily, especially since no other major institution currently offers a MS in Risk Management in New York City.

II. Faculty

6. Evaluate the faculty, individually and collectively, in regard to training, experience, research and publication, professional service, and recognition in the field.

The faculty involved with this MS in Financial Risk Management program is extremely high-quality and well-known, both individually and collectively. There are at least 21 full time faculty who are available for this program- two of them holding endowed chairs.

Several faculty members are leading researchers in the area of risk management or in closely-related areas that form the intellectual foundations of risk management. Some of the more noteworthy include Professors Kishore Tandon, Terrence Martell, Linda Allen, Avner Wolf, and Liuren Wu. Further most of them are involved in a number of editorial and scholarly roles relative to leading finance and economic journals.

7. Assess the faculty in terms of size and qualifications. What are plans for future staffing?

At the present, the faculty is sufficient in terms of size and more than sufficient in terms of qualifications. However, close monitoring of future staff should be considered.

8. Evaluate credentials and involvement of adjunct and support faculty.

Based on the information provided, all the courses in the program will be taught by full-time faculty members of the Bert W. Wasserman Department of Economics and Finance and all have doctoral degrees.

III. Resources
9. Comment on the adequacy of physical **resources** and **facilities**, e.g., library, computer, and laboratory facilities; practica and internship sites; and support services for the program, including use of resources outside the institution.

Having visited Baruch College several times, most recently in the spring of 2010, I can say first hand that the infrastructure of faculty are more than adequate in terms of library resources and computer laboratories, as well as offices for faculty and staff and instructional classrooms to support this new MS program.

10. (Only for programs requiring master plan amendment.) What is the **institution's commitment** to the program as demonstrated by the operating budget, faculty salaries, and the number of faculty lines relative to student numbers and workload.

   Commitment seems strong, particularly with the benefit of the two endowed chairs including Professors Kishore Tandon, Terrence Martell, Linda Allen, Avner Wolf, and Liuren Wu, within the economic and finance faculty group.

IV. Summary Comments and Additional Observations

11. Summarize the **major strengths and weaknesses** of the program as proposed with particular attention to feasibility of implementation and appropriateness of objectives for the degree offered. Include any further observations important to the evaluation of this program proposal and provide any recommendations for the proposed program.

   The breadth of the program course work and the quality of the faculty and staff are the strengths. Given the location in the New York City area, this proposed MS in Financial Risk Management program has great potential to become a leader among other programs of this kind and within the risk management niche. Moreover, the value of Baruch College’s brand and location will enhance the likely success of this new MS program.

   As stated earlier, the recommended program is in the mainstream of what is happening around the world. This proposal clearly offers Baruch College a great opportunity for expanding its degree offerings in an important and vital area. Students, faculty, an array of financial and physical resources, as well as support from major stakeholders suggest that the time is now and Baruch College is well suited to undertake this task.

   As an independent external evaluator, I recommend its adoption without reservation.
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ACADEMIC EMPLOYMENT:
Executive Director of the Center for Asset Management, 2005-present.
Chairperson of Finance Department, Boston College Carroll School of Management, 1987-1993 and 2003-Present
Full Professor of Finance, Boston College School of Management, 1989-Present
Executive Director of Finance Advisory Board, 2001-2005.
Visiting Scholar, the Smurfit School of Business, University College Dublin- Spring 2004
Executive Director of Boston College Graduate Programs (MSF and Ph.D.) in Finance, 1987-2002
Associate Professor of Finance, Boston College Carroll School of Management, 1982-1989
Assistant Professor of Finance, Boston College Carroll School of Management, 1979-1982
Graduate Teaching Assistant in Business Finance, University of Alabama, 1975-1979
PUBLICATIONS:


**PROCEEDINGS AND OTHERS:**


**Submitted Papers:**

“Bank Earnings Management and Tail Risk during the Financial Crisis” (with Lee Cohen, Marcia Millon Cornett and Alan Marcus).


“The Performance of Banks Around the Receipt and Repayment of TARP Funds: Over-achievers versus Under-achievers” (with Marcia Millon Cornett and Lei Li).

“Can Analysts Analyze Merger?” (with Mengxing Zhao, and Julie L. Zhu)