

## FREQUENTLY ASKED QUESTIONS (FAQs)

### About the Program

#### What is Financial Statistics and Risk Management (FSRM)?

Financial Statistics is the application of statistical methods to problems that arise in finance. It incorporates methods to identify, extract and use meaningful information that can be found in large volumes of data. Some sample applications include:

- identifying and exploiting arbitrage trading opportunities resulting from market inefficiencies by detecting signals contained in structured and unstructured (social media, news commentary, macro-economic and fiscal policy related events) data
- selecting and optimizing portfolios quicker and more effectively
- evaluating all types of uncertainties and risk exposures

Traditionally, the objective of risk management is to identify, evaluate, manage and continually monitor credit, market, operational and enterprise risk exposures. It also involves learning techniques for identifying, estimating and managing risk through hedging, transferring of risk through market mechanisms, optimizing return for a given risk appetite and regulatory compliance.

Effective risk management requires a deep understanding of uncertainty and probability as well as a high skill level in statistical modeling, data analysis, estimation and prediction. It also requires knowledge of the financial markets, instruments and the major regulations applicable to financial institutions including the Basel Accords, Dodd-Frank and related agency rule makings.

#### What is the difference between the FSRM Master's program and the MS in Statistics program at Rutgers?

The FSRM Master's program is a professional degree program designed to train students for immediate post-graduation employment in the financial services industry or in financially focused departments of enterprises. The coursework and training that students receive in the FSRM program focuses on teaching statistical and related data analysis and computational tools required for quantitative analyst positions in the financial services industry. It also provides supporting finance, financial markets and regulatory content knowledge and training. Only financial data and applications are used for course projects. Such in-depth training is most suitable for students with a strong interest in working as quantitative analysts in the financial industry or in enterprise financial analyst positions.

The MS in Statistics program is less specialized, with coursework and training concentrating on general statistical methods. Graduates are prepared to continue their studies toward a Ph.D., or to seek employment as statisticians in various industries and roles including financial services, pharmaceuticals, marketing and consulting.

Though some of the course content required for the FSRM and MS in Statistics programs overlap, special course sections that emphasize financial applications are reserved for FSRM students. These tend to be more demanding, involving the analysis of real financial datasets, as well as written projects and oral presentations, which help to hone students' skills for the financial workplace. In addition to being taught by regular FSRM program faculty, outside practitioners give seminars and teach select courses or course sections.

### **What are the differences between the FSRM Master's program, the MS in Mathematical Finance (MSMF) program, and the Master's in Quantitative Finance (MQF) program at Rutgers?**

All three programs aim to train students to work in the financial services industry. While there is some overlap in course content, each program has a different focus, which is reflected in substantial differences in the programs' requirements.

The MSMF program focuses on mathematical models for financial asset pricing and the related numerical methods required to apply these models. Typical applications of these methods include complex and customized derivative securities pricing.

The MQF program trains students to leverage their knowledge of corporate finance, portfolio theory, corporate structures and re-structuring in a range of enterprises including financial institutions.

The FSRM program is a statistics and data analytics based program, tailored to train the next generation of professional financial statisticians and risk managers. FSRM program graduates are prepared to take immediate employment as financial statisticians and risk managers. These professionals deal with issues of uncertainty as well as risk identification and mitigation rather than complex custom or bespoke derivative pricing and derivative product development. The FSRM program is most suitable for students interested in statistical analysis of large, diverse datasets for financial applications including statistical arbitrage trading, derivative pricing calibration, regulatory regime stress testing, simulation and risk management.

### **How is Rutgers University FSRM Master's program different from other universities?**

Traditional quantitative finance programs focus primarily on mathematical modeling for developing and pricing complex derivative products. Indeed, fundamental financial engineering concepts, such as no-arbitrage pricing and risk neutral probabilities, are a component of the FSRM program. However, we are unique in emphasizing statistical and data analytics tools for measuring, monitoring, managing and mitigating uncertainty, risk and volatility; optimizing asset portfolio selection and modeling market trends.

### **What prerequisites are necessary to succeed in the program?**

The FSRM program is designed for highly motivated students with a bachelor's degree in mathematics, statistics, engineering, computer science, economics, finance or a related

quantitative field. Successful applicants will have completed courses in multivariate calculus, linear algebra, advanced undergraduate statistical methods and computer programming.

### **Will I be able to do internships?**

Yes, the program strongly encourages students to participate in summer internships with financial companies and will do its best to help students obtain internships through its connections with the financial industry. Full-time students often do internships after their second semester.

### **Will the coursework help me obtain a Financial Risk Manager (FRM) Certification from the Global Association of Risk Professionals (GARP) or the PRM Certification from PRMIA?**

Yes, the FSRM program has an established Academic "Partner Plus" relationship with GARP. The FSRM coursework incorporates preparation and testing for the Level-1 and the Level-2 (FRM) Certification examinations.

The FSRM program also has a Module 1 University Membership in PRMIA and is applying for Module 3, The University PRM Accreditation Program which will allow students who complete appropriate courses to be eligible for exemption from PRM Exams I, II, or both

### **How many students participate in the program?**

About 30 to 35 enter the FSRM program every Fall semester and a few in the Spring semester. Since it is a three semester program, we have between 35 to 40 students resident in the program in the Spring semester and 75 resident in the Fall semester. Our goal is to keep the number large enough so students have exposure to ideas across a broad spectrum, but small enough that students can interact and learn from each other through group projects.

### **How long does it take to complete the degree?**

Students must successfully complete 10 three-credit courses to obtain the FSRM Master's. A full-time student can expect to complete the program in three semesters, but we also accommodate part-time students.

### **How does the Rutgers University FSRM Master's rank compared to other programs?**

Currently the FSRM program is relatively small and new; our first class entered in the Fall of 2011. At this point in the program lifecycle, we expect to be absent in the rankings schemes, and we believe this is no reflection of the quality of the program or demand for its graduates, most of whom find employment either before graduation or within one to two months of graduation.

## Careers

### What types of firms are interested in hiring graduates?

Financial statistics and risk management knowledge and skills are in high demand. They can be applied in any area of finance where there is uncertainty and risk that needs to be managed including trading, risk management, market forecasting and asset management.

Investment and commercial bankers, hedge funds, insurance companies, credit card issuers and acquirers, financial asset managers, commodities traders, regulators, government budget offices and corporate treasuries are among those seeking this expertise.

### Do you offer career counseling and placement services?

We help graduates secure employment by utilizing our connections with recruiters and the financial services industry. Students have an opportunity to attend industry career days, financial company information sessions and campus visits as well as other networking events. Student resume books are distributed in print and online to potential employers, and a designated Student Gallery on the FSRM website exposes students to recruiters and financial institutions. Additionally, career development support is available through required workshops in resume writing, interviewing skills, professional networking and other job search tools. English as a Second Language (ESL) courses are required for non-native English speakers on basis of a language skills assessment. ESL training is provided on a non-tuition basis in the entry Fall semester.

### What is the starting salary range of Rutgers University FSRM Master's graduates?

Graduates can expect to earn about \$70,000 - \$90,000 in their first year.

## The Application Process

### What are the application requirements?

Applications are made through the Graduate and Professional Schools Admission Office and not through the FSRM program directly. You will need to provide official transcripts, three letters of recommendation (professional or academic), a personal statement, GRE or GMAT test scores and TOEFL or IELTS test scores (international students). Official Test scores (TOEFL/GRE) must be sent directly from ETS to Rutgers University (use code **2790** for Rutgers university, no code for our department is needed). GMAT scores must be sent to the Graduate School of New Brunswick (use code **QK5-B5-51** for Master in Financial Statistics and Risk Management).

Applicants to the FSRM program need to have minimum verbal GRE scores of 500/153, and successful applicants will need to have quantitative scores considerably higher than the 600/148 Rutgers graduate school minimum.

For students submitting GMAT scores, the typical requirements are a verbal score of at least 29 and a quantitative score of at least 41. However, there is often some flexibility for the verbal score for both GRE and GMAT.

The minimum requirements for applicants who must submit a TOEFL score are: 22 (Writing), 23 (Speaking) 21 (Reading) and 17 (Listening).

### **My TOELF scores are below the requirement. Am I still eligible to apply?**

Yes. Your application as a whole is more important than individual scores, and weaknesses can be balanced by strengths in other parts of the application. However, if your scores are much below the requirement, we suggest that you retake the test.

### **Do I need work experience to be admitted to the program?**

Work experience is not a requirement, but we value having some students with work experience.

### **How do I apply?**

Students should apply through the university-wide graduate admissions office. Please see our [admissions page](#) for further details on the application process, including deadlines.

### **What is the deadline for applying?**

The FSRM Master's program accepts applications from full-time and part-time students for both the Fall and Spring semesters. Deadlines by semester are provided at [Deadlines and Program Requirements](#) posted by the Admissions Office. Acceptance to the program is on a rolling admissions basis, and there is some flexibility regarding the posted deadlines. However, space is limited so candidates are encouraged to apply by the posted deadlines).

General Application Guidelines and Status FAQs are posted at <http://gradstudy.rutgers.edu/about/frequently-asked-questions>.

### **If I enroll in the MS in Statistics program at Rutgers, can I transfer into FSRM later?**

Transferring is possible, but not guaranteed. A maximum of nine credit hours of course work (which typically amounts to three semester-long courses) can be transferred to the FSRM program. Students in the FSRM program are required to take more demanding, specialized sections of some of the courses required for the MS in Statistics program. Students who have completed non-FSRM sections of these courses and want to transfer credits to the FSRM program, may be required to complete additional work, such as a written project, before receiving credit.

### **If I enroll in the MS in Statistics program at Rutgers, can I register for special FSRM course sections?**

The special FSRM sections often have a very limited class size to achieve the desired learning experience and are reserved for FSRM students and for other Rutgers Quantitative Finance programs which have reciprocity with FSRM (include Math Finance and the MQF program). The FSRM students have higher priority when it comes to registering for these sections.

### **If I enroll in the FSRM program, can I transfer to the MSMF or MQF programs later?**

It is possible but not guaranteed. Evaluation of transfer applications to these other programs will be based on your performance in the FSRM program and other considerations. If you successfully transfer from the FSRM program to another program, credits earned in the FSRM program may be transferrable as well.

### **I have attended or am currently attending a graduate school. Will my credits transfer?**

First you must apply and be admitted to the FSRM Master's program. Permission to transfer credit will be granted on a case-by-case basis and will not be granted automatically. Students can apply to transfer up to nine credits for graduate courses, provided they are equivalent to courses offered by our program, and the credit was not used to earn another graduate degree.

## **Costs**

### **What is the cost of attendance?**

Our tuition is highly competitive — about \$29,000 for New Jersey residents and \$50,000 for non-residents for the full program 30-credit requirement.

### **Is financial aid available?**

No scholarships, grants, teaching/research assistantships or funding are available for students in the FSRM program. Those who have a grant or fellowship from an outside source are welcome to apply it toward the tuition cost of the program. U.S. citizens and permanent residents may be eligible to apply for various forms of student aid.

### **Are loans available to international students?**

Students are expected to fund the entire course of study at Rutgers.

### **Is graduate housing available?**

For information on campus housing options visit <http://ruoncampus.rutgers.edu/>

### **Where can I learn more about the Rutgers FSRM Master's Program?**

You may call us at 848-445-8000, email us at [fsm@stat.rutgers.edu](mailto:fsm@stat.rutgers.edu) or visit our web site at [www.fsm.rutgers.edu](http://www.fsm.rutgers.edu).