



the **Financial Engineering Management** program

A Joint Program of the School of
Mathematical Sciences

&

The Peter F. Drucker and Masatoshi
Ito Graduate School of Management

Frequently Asked Questions

What is the focus of the Financial Engineering Management program?

The MSFE at Claremont Graduate University is offered as a collaborative, joint effort between **Peter F. Drucker and Masatoshi Ito Graduate School of Management** and the **School of Mathematical Sciences** at CGU. Our students take approximately half of their coursework in applied mathematics with an emphasis on financial applications. With this unique structure, the MSFE degree delivers a focused, yet practical multi-disciplinary education in financial engineering that is both critically important to management and quantitatively extensive. The close integration of management and mathematics is the hallmark of this degree program.

For the first half of their education, students are in classes with Mathematics Ph.D. students. Most of our Math faculty hold Ph.D.s in industrial engineering or operations research, and are interested in applications to financial engineering. For the financial management half of their coursework, our students are in classes with MBA students. The management-side coursework is taught by professors who are interested in the managerial applications of financial engineering and who emphasize discussion-format and case-method classes, with high levels of student participation, teamwork, and presentation.

Unlike programs offered by mathematics or statistics departments, our graduates have the demonstrated ability to rise rapidly in their organizations and to be effective as leaders. Unlike programs offered by management schools, our graduates have achieved the level of technical expertise that is comparable to a student with a Ph.D. in mathematics and a field in financial mathematics.

How will the CGU MSFE prepare me for employment in the financial Sector?

The Financial Engineering Management (FEM) program ultimately seeks to enable students to develop the technical skills needed to understand, evaluate, and design a portfolio of complex financial products, and make investment decisions. The focus on mathematics and management is particularly important. When students enter the business world, they often find that real applications do not follow the necessary assumptions of the models they learn in the classroom, and they are forced to modify these models; however a student who does not have an underlying mathematical foundation is ill equipped to do this, and it may hold them back in their careers.

How does the CGU M.S. in Financial Engineering compare to an MBA?

Most MBA programs, including the program at the Peter F. Drucker and Masatoshi Ito Graduate School of Management, are two-year programs designed to meet the educational needs of a broad range of students. MBA students may choose to concentrate in finance; however, finance courses in traditional MBA programs usually do not assume in-depth mathematical training, and often focus on elementary concepts and spreadsheet analysis.

The FEM program at CGU is comprised of less units, resulting in a lower cost and time commitment. It is more quantitatively rigorous and draws on tools from applied math, statistics and financial and economic theory—all while integrating managerial concepts and applications.

How does the CGU MSFE degree compare to the degrees offered by other institutions and universities, such as the Masters in Financial Mathematics or Masters in Finance?

Some financial programs focus more on finance, but do not give students strong quantitative skills to enable them to do more with their knowledge. Most programs offering the Masters in Finance are comprised of MBA finance courses and often focus on elementary concepts and spreadsheet analysis. At CGU, the FEM program believes that the integration of a rigorous mathematic curriculum enables students to develop skills such as analytical and simulation techniques that students need to analyze and evaluate financial products and other risk exposures.

Programs offering the Masters in Financial Mathematics, on the contrary, fail to stress leadership development and management training. The management component, including case studies and field-based internships, develops the methods and insights students must have to interpret organizational needs and goals in the design of appropriate exposure to financial, organizational, and product-market risks.

It is the unique blend of the two that give our students an advantage over computational mathematics programs or financial engineering programs that focus primarily on finance. To date, employers and internship sponsors have been extremely satisfied with our students.

How does the program maintain relevance?

We have created an alumni advisory board for the program. The board consists of practitioners from companies such as Goldman Sachs, Deloitte, First Quadrant, Primus, Wilshire Associates, and Trust Company of the West. When the board members evaluated the program for relevance, they unanimously agreed that they preferred our students. The reason being was that our joint FEM program between the Peter F. Drucker and Masatoshi Ito Graduate School of Management and the School of Mathematical Sciences emphasized both mathematical and managerial skills.

What types of companies hire Financial Engineers?

- Airlines
- Brokerage Firms
- Commercial Banks
- Corporate Finance Departments
- Corporate Finance Law Firms
- Energy Companies
- Insurance Companies
- Investment Banks
- Investment Portfolio Managers
- Mortgage Companies
- Risk Management Consulting Firms
- Venture Capital Firms
- Goldman Sachs
- Deutsche Bank
- Lehman Brothers
- Indy Mac Bank
- Wilshire Associates
- Countrywide Financial
- Trust Company of the West (TCW)
- The J. Paul Getty Trust
- Primus Financial
- People's Choice
- Kaiser Permanente
- Moore Capital Management

Applications of Financial Engineering:

- Modeling and forecasting financial markets
- Quantitative training and arbitrage
- Hedging and financial risk management
- Corporate financial policy and quantitative issues
- Investment Management
- Asset allocation
- Risk Management
- Derivative instruments and securities

How long does it take to complete the MSFE degree?

Students taking the MSFE degree on a full-time basis can complete the program in either 3 or 4 semesters, depending on the number of units a student takes a semester; however all of the courses in the program are challenging and require a significant investment of time. In addition, many of our students like to take advantage of the “free” audit policy of CGU to sit in on another course during the semester. As a result, most full-time students complete the program in 4 semesters.

Is there a part-time option?

Yes. Students who are pursuing the MSFE degree on a part-time basis generally take 1 or 2 courses per semester and typically complete the degree in about 8 semesters.

Can I switch between full and part time?

Students are free to switch between full-time and part-time to suit their specific needs and outside commitments.

What is the application deadline?

A student can enter the program in Fall. Applications are considered on a rolling basis, as space is available; however, students are strongly advised to submit their applications by the “priority deadline.” The priority application deadline for the fall semester is February 1st.

What is the average GPA of admitted students?

Most of our students have undergraduate degrees in engineering, mathematics, economics, or finance. Some already have completed Ph.D. or other graduate degrees in these fields. The average undergraduate GPA for our admitted students is about 3.5 in a 4.0 scale. Rather than overall GPA, we look mainly at performance levels in courses that are most relevant in the MSFE program.

What are the minimum GMAT and GRE scores?

We do not have a cutoff GMAT or GRE score; however, most of our students generally score in the top tenth percentile in the quantitative and analytical parts of the exams. The mean quantitative GMAT and GRE for our admitted students is 85th to 90th percentile. When we admit students with lower quantitative scores it is because other evidence in their application files demonstrates that they are able to perform well in the math courses that are required or expected of our MSFE graduates. The mean verbal score is around the 60th percentile.

What is the minimum TOEFL score?

In most management classes offered by the Drucker School, students are expected to participate actively in class discussions and case presentations. As such, effective English written and oral communication is essential to success in the MSFE degree program. The average TOEFL score is 273 (CBT). Admitted students who score less than 250 (CBT), 100 (IBT) or 600 (PBT) on the TOEFL, or who score below 6.0 on the IELTS, will be required to take the Global Communications Course, a non-credit English course, during their first semester at CGU. In some cases, we may also require or recommend that an international student participate in the International Fellows program* that is offered by the Drucker School in conjunction with the ESL program of Pitzer College.

What are the math requirements?

The prerequisite math courses for admission to the program are Calculus I, II and III (multivariable calculus) and linear algebra, or the equivalent. Many academic disciplines and schools refer to these courses by other names or offer other sets of courses that provide the necessary prerequisite knowledge. If you are uncertain about your background, please check with us, and be sure to provide enough information so that we can properly evaluate your application. Students who do not meet the prerequisites are encouraged to complete appropriate coursework before coming to the school.

In some cases, students who do not demonstrate mathematical proficiency are encouraged to apply to the Drucker MBA program with a concentration in finance as an alternative. Our prospective students have also considered starting in the MBA program and then transferring to the MSFE degree once they have demonstrated proficiency in the mathematical prerequisite. If you think this might be of interest to you, you should contact us in advance, so we can provide appropriate advising.

I do not have enough work experience, should I apply anyway?

We value relevant work experience, however, such experience is not a requirement for admission in the FEM program. Students with no work experience but strong academic records and the demonstrated potential to develop as leaders have the same opportunities as those who have work experience.

I completed my bachelor in three years, am I eligible to apply to the FEM program?

A three-year bachelor is technically not recognized as a bachelor degree in the U.S. However, the faculty can choose to admit a student with a three-year degree (and non-degree) provided he/she has an outstanding academic record and impressive work experience in order to be considered for admission in the FEM program.

* Please note that there is a fee for the International Fellows program. Please visit CGU website for more information.

How do you evaluate my application?

We receive a large number of applications for the MSFE degree each year, and most applicants are very well qualified in terms of their academic backgrounds and test scores. As a result, admission to the FEM program is highly selective. The admissions committee makes their decision based on the overall qualification of an applicant, with particular attention to an applicant's demonstrated ability to perform well in demanding mathematical finance classes and demonstration of leadership potential. If you have high test scores, and can use your experience, personal essay, and recommendation letters to demonstrate quantitative strength and leadership capabilities, it might increase your chance of getting admitted.

Can I get financial aid?

Currently, the school provides tuition fellowship for most of our students, based on the student's merit. Also, students may work as Teaching Assistants or Research Assistants by contacting the professors directly.

What is the tuition amount per year?

Tuition and fees may vary from year to year. In addition, tuition depends on the number of credit units the student takes in the semester. You will find the most recent tuition information and detailed budget estimates on our website at <http://www.cgu.edu/pages/1161.asp>.

How many students do you accept per year?

Our program has grown rapidly in recent years and at this time we do not have a specific cap on admissions.

Is an internship required and scheduled by the program for each enrolled student?

Internships are not required to complete the MSFE degree; however, many of our students obtain internship positions the first summer after they start the program. The Office of Career Management, as well as the Financial Engineering staff, will be happy to help you find an internship. Internships can be non-credit or taken as a field study which can apply towards the management electives requirement. In most cases, international students are required by the US government to take internships *for* credit as part of their practical training. We also have a great network of alumni who inform us about open positions in the institutions where they are employed.

Are there any opportunities for research?

There are research opportunities for students to work with professors, as well as other work opportunities, but they must be admitted.

I have a Masters degree from another university; can I apply to the Financial Engineering PhD program at CGU?

We do not admit students directly to our PhD program. Even though you may be pursuing a Master's at another school, you still would need to start the MSFE program at CGU in order to be considered for

the PhD program. When you are admitted to the Ph.D., all coursework taken in the MSFE would count toward the 72 credit-units requirement of the Ph.D.

Admission to the Ph.D. is based not just on the student's demonstrated capability, but also the fit in terms of research interests, etc., between the student and the Drucker and Math faculty. Because our faculties are small, the question of fit becomes very important, and cannot be evaluated without the student being here and taking courses with faculty who are likely to be asked by the student to serve on a dissertation committee. Once a student is admitted to the Ph.D. program, our expectation is that they will successfully complete the degree.

Can I have some placement data?

Our recent graduates are working at the following companies: Goldman Sachs, Lehman Brothers, Deutsche Bank, Wilshire Associates, Countrywide Financial, Trust Company of the West (TCW), Primus Financial, IndyMac Bank, etc. The starting salaries range from \$80,000-\$100,000, plus bonus, depending on work experience and location.