

Savvy, Sophisticated, Specialized

U-M Prepares Students for Global Market

BY NEJAT SEYHUN

One of the characteristics of the new world economy is that it is becoming more interconnected and more specialized. This new world requires students to learn technical and financial sophistication and the ability to solve complex problems to thrive in a fast-paced, volatile environment with rapidly shifting economic bases.

Nationally and around the globe, a high degree of specialization is emerging as companies recognize that they no longer have to do everything themselves. Increasingly, the trend is to do a few things, yet do them very well. For example, India is becoming recognized for its information technology expertise, China for its low-cost manufacturing, and the U.S. for innovation. In this newly interdependent world, business and personal success are closely associated with the ability to understand, negotiate, and collaborate with colleagues and customers around the world.

U-M Fine-Tunes Master's Program

Recognizing that financial expertise is key in an increasingly global environment, the University of Michigan is fine-tuning its already successful master of science in financial engineering program. The 11-year-old program was recently named to Advanced Trading's Top Ten list of "quant" programs (referring to quantitative skills).

A truly interdisciplinary education, the 39-credit-hour program is usually completed in three academic semesters. The core includes finance courses from the Stephen M. Ross School of Business and mathematics and statistics courses from the College of Literature, Science, and the Arts, in addition to optimization and computational courses from the College of Engineering.

Graduates with degrees in financial engineering basically work with data, statistics, and financial theory in some form of computational analysis. They apply advanced mathematical methods, financial models, and computer technology to financial products and financial management. Because of the technical requirements of the program, engineers, physics and math majors, and computer programming specialists are well represented in the student population.

There is a strong demand for graduates with skills in finance, math, and computer programming. There are challenging career opportunities in energy and other commodities trading, startups, joint ventures, risk management, financial services, banking, wealth and asset management, insurance, government agencies, trading companies, hedge funds, information technology, and consulting. The average starting salary for graduates is between \$80,000-\$90,000.

The financial engineering program opens new doors and opportunities for students. Typically no one person graduates with expertise in all three fields of finance,



First-year Financial Engineering Program students gather on campus during the 2008 summer intensive boot camp program for all entering students.



An overflow crowd of prospective students attended a panel discussion in which leading professionals gave personal views of their careers in quantitative finance. (From left) Nejat Seyhun, Financial Engineering Program Director and moderator; Marcos Leonardo Benvenuto, BCP Securities, LLC; Reza Kamaly, Necessity and Chance, LLC; Larry Suarez, Comerica Bank; Gilbert A. Rubley II, DTE Energy Risk Analysis.

mathematics, and computational skills after finishing his/her undergraduate degree. Instead, students are typically exposed to only one of these areas. For instance, those with an engineering background are proficient in math, but lack the financial and computational skills. The program also makes students aware of the bigger world of finance so that they can put the models and techniques in context and develop the kinds of soft skills they need to move up in their jobs.

Soft skills include communication, leadership, and managing interdependency. Students have an opportunity to learn networking skills and start to build relationships that will benefit them for the rest of their lives. Immediate networking takes place on campus as first-year students get to know the second-year students. Within one semester, those second-year students will have moved to well-paying jobs on Wall Street, thereby creating an immediate network of friends in the right places.

U-M's financial engineering students form a very talented, select, and diverse group. This year, 55 were admitted from approximately 460 applicants. They come from all around the globe and have backgrounds such as engineering, mathematics, computer science, economics, statistics, finance, business administration, and accounting.

The Best Start? A Boot Camp

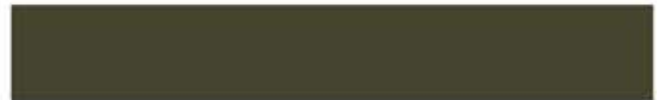
Students bring widely different educational backgrounds, perspectives, experiences, and ways of expressing themselves. In order to help them get off to the best possible start, three years ago U-M established a required six-week intensive summer "boot camp" program for all entering students. Courses cover all prerequisites in a very intense and condensed form so

that all incoming students are equally prepared when they begin their core classes.

The boot camp experience also ensures that students get to know each other. Eight hours a day, six days a week, they work in the classroom together, eat lunch together, and socialize together. They also attend lectures on soft skills such as public presentation, resume writing, leadership, and team building in addition to finance, math, statistics, economics, and computer programming.

Since the financial engineering program is small, it is very flexible. The university customized existing graduate courses to tailor them to students' needs. It also constantly monitors the curriculum and makes necessary changes to ensure it serves the students' interests. For instance, last year U-M instituted a field action project in which students work on consulting projects for companies in return for college credit.

One of the reasons the applicant pool is growing is that students like the program and then recommend it to others. The U-M approach has encouraged the development of a strong lifelong professional network and students are the global market's most valuable asset.



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