



SOCIETY OF ACTUARIES

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Competing Education

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To perform the complex quantitative analysis in pricing derivative products, investment and commercial banks have hired from the ranks of mathematicians, physicists and actuaries—persons also deemed to be inclined towards the investment field. The commercial and investment banks ascertained that these individuals had the necessary mathematical skill, and these banks later supplemented that ability with in-house training to “convert” these professionals to the investment industry. With the mushrooming of several financial

have the distinct advantage of being able to combine study of the theory with on-the-job practice if they work in the investment department of an insurance company or are involved in asset/liability management, pricing, or cash-flow testing for investment-oriented insurance products. Even financial math programs with well-developed internship arrangements will not be able to match this traditional strength. Moreover, through job rotations, the actuary’s overall knowledge of his financial institution is much broader—actuaries know how the other areas in the

organization operate and fit together. Beyond the mathematics of pricing, the actuary knows marketing, underwriting, financial reporting, administration, and so on. The actuary is a better rounded financial professional—at least as to insurance companies. Another disadvantage of these school pro-

grams is the cost. In some cases tuition for the program can be as high as \$30,000.

On the other hand, the financial math courses have a more interactive approach in learning. The training is laboratory intensive. Sophisticated software is licenced to these programs. In general, students are less isolated and have a better opportunity to ask and resolve questions by discussing with other students and faculty. The nature of the field is such that it is easier to develop an understanding of the material by “playing” with models. To some extent, these advantages can be overcome by the use of technology.

Technological initiatives being developed by the SOA will address some of these concerns. For example, by posting questions on the web site, access to a larger group of students and practitioners is possible. The redesign of the examination system will also help bridge the gap—the new Course Seven is an on-site intensive seminar in modeling. There is a strong body of academic and practitioner actuaries that stand ready to provide this training. Some of the academic actuaries are already on the faculty in financial math programs.

The travel time involved in the SOA examination system is another disadvantage. On a full-time basis, a Master’s in financial math can be obtained in nine months, and a part-timer could complete the course in anywhere from nine months to three years. Once again, the SOA exam redesign may help overcome this disadvantage.

It is worthwhile for actuaries to have some familiarity with these programs. In some cases actuaries may be able to make use of these courses to supplement traditional continuing education. It may also make sense to forge alliances with these institutions, particularly where there are actuaries on faculty, to enhance our regular education effort. Some programs are offered by the mathematics department, others within the business school or, in some cases, the engineering school. Financial Math programs are offered in the major cities in Canada and the U.S. For those interested in investigating further, a sample of the universities offering such courses and their web sites is provided below:

“With the mushrooming of several financial mathematics programs at major universities, firms can now hire a person who requires substantially less in-house ‘conversion.’ The program purports to train students to be ‘financial engineers’.”

mathematics programs at major universities, firms can now hire a person who requires substantially less in-house “conversion.” The programs purport to train students to be “financial engineers.” Conversely, graduates of these programs have skills which are attractive to the traditional employers of actuaries. We should be aware of them as our potential competitors, primarily in our emerging practice areas, but eventually on our traditional turf. To start with, we should have a degree of familiarity with the academic programs in which they train.

There is substantial overlap between the SOA Investment track syllabus and the curriculum for these courses. Students taking SOA courses

Carnegie Mellon University
Columbia University
Cornell University
MIT
New York University
Oregon Graduate Institute
University of Chicago
University of Toronto

fastweb.gsia.cmu.edu/MSCF
www.math.columbia.edu/department/masters_finance.shtml
www.orie.cornell.edu/meng/brochure/tables/financial1.html
web.mit.edu/sloan/www
www.math.nyu.edu/programs/math_fin.html
www.cse.ogi.edu/CompFin/finmath.uchicago.edu
www.math.toronto.edu/finance

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