

MATHEMATICAL FINANCE



LEARNING TO MAKE A WORLD OF DIFFERENCE.™

TRENT
UNIVERSITY



Why Study Mathematical Finance?

In recent years there has been spectacular growth in mathematical finance, a new branch of mathematics. A breakthrough in financial theory, based on advanced stochastic analysis, has created both strong demand from top financial institutions for mathematics graduates and exciting new research opportunities. Every indication is that this growth will continue. Owing to its mathematical complexity, this theory is not covered by standard undergraduate programs in economics or finance.

To meet this need, Trent University has created a Specialization in Mathematical Finance.

The goal is to produce graduates with rigorous mathematical, statistical and computing skills, who have the ability to apply them to the quantitative analysis of industrial, commercial or financial business decisions, or to undertake postgraduate work in these or related areas.

Trent University also offers opportunities for further study and research in mathematical finance through its graduate program.





Career Opportunities

Graduates of this specialization may consider career opportunities in:

- Asset and mutual fund management
- Financial engineering: developing new financial products for investment banks and energy companies
- Quantitative analysis of financial markets: developing mathematical models to assist traders
- Financial risk management
- Accounting, actuarial services, lending and investment analysis
- Data analysis of market research, demographics, scientific and medical research
- Academic or industrial research in mathematics, applied mathematics, and mathematical finance
- Teaching of mathematics



"The number of mathematics courses offered at Trent has steadily increased over the years and so has the number of faculty. This can only aid in diversifying the program.

This is proof that the department is growing and becoming stronger thus making students better equipped to pursue their goals in mathematics."

Rizwan Mukadam,
B.Sc., M.Sc.



Program Details

The Department of Mathematics offers a specialization in mathematical finance. Upon completion, students will receive a B.Sc. Honours degree in Mathematics with Specialization in Mathematical Finance.

The requirements for the specialization are based on the single-major Honours program in Mathematics, with the addition of the following required courses:

Financial and Industrial Mathematics

- MATH 335H – Linear programming
- MATH 351H – Mathematical finance
- MATH 361H – Discrete optimization
- MATH 451H – Mathematical risk management

Economics

- ECON 101H – Introductory microeconomics
- ECON 102H – Introductory macroeconomics
- ECON 302H – Financial economics

Probability & Statistics

- MATH 155H – Introduction to probability
- MATH 256H – Introduction to statistical inference
- MATH 356H – Linear statistical models
- MATH 357H – Introduction to stochastic processes
- MATH 457H – A second course in stochastic processes

Applied Mathematics

- MATH 203H – Introduction to numerical and computational methods
- MATH 205H – Ordinary differential equations
- MATH 303H – Methods of applied mathematics
- MATH 305H – Partial differential equations
- MATH 403H – Advanced numerical methods

The Trent Learning Experience

Trent University is an outstanding undergraduate university known for its commitment to a liberal arts and sciences education. Celebrated for excellence in both teaching and research, Trent consistently ranks among the top institutions nationwide for quality of education, teaching, and research. In particular, the University is renowned for its focus on the individual student through smaller class sizes, ratio of students to faculty members with Ph.D.s and access to scholarships and bursaries.

Faculty members are accomplished teachers and researchers who provide an array of opportunities for their students. It is one of Trent's goals to provide educational programs that encourage students to think critically, creatively, constructively, and to communicate their ideas effectively, as well as to instill a curiosity that engenders lifelong learning. The Trent experience is not limited to attending lectures and labs; it is a composite of in-class and after-class learning. The University experience is about sharing new information, insight and understanding, and furthering yourself as you enrich the world around you.

Spanning the picturesque Otonabee River in the beautiful Kawartha Lakes district of Peterborough, Ontario, Trent's main campus features award-winning architecture designed to complement its natural setting. Trent's Oshawa campus also offers a selection of full undergraduate degree programs.

For more information contact

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