

# Math 174: Mathematics of Finance

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## Catalog Description

**174. Mathematics of Finance.** (Formerly numbered 181.) Lecture, three hours; discussion, one hour. Enforced requisites: courses 33A, 170A (or Statistics 100A), Economics 11. Not open for credit to students with credit for Statistics C183. Modeling, mathematics and computation for financial securities. Price of risk. Random walk models for stocks and interest rates. No-arbitrage theory for pricing derivative securities; Black-Scholes theory. European and American options. Monte Carlo, trees, and finite difference methods. P/NP or letter grading.

## General Information

In the past several decades mathematics has become an integral part of the financial industry.

Math 174 has been developed by Russel Caflisch, in consultation with the Department of Economics. The initial offering was given by Caflisch in the Fall Quarter of 1997 with an enrollment of 29. The course is related to course Economics 103D, which was developed and taught Winter Quarter 1997 by William Zame. It is expected that further offerings on the mathematics of finance will be developed jointly by Mathematics and Economics, in which these two courses will play a role.