

Mathematics, Economics and Finance

Many mathematics graduates work in financial industry or pursue a higher degree in economics or finance.

*Major in Mathematics,
Minor in Economics / Finance / Risk Management*



Master / PhD: Economics

Finance

Risk
Management

*Mathematics is the common language in these areas
and it is easier to learn math when you are young.*

Mathematics, Economics and Finance

Nobel Prize in Economics: Out of the 43 Laureates of the past 22 years,

19 have degrees in mathematics:



Opinions of the 2011 Nobel Laureate Thomas J. Sargent on studying Mathematics at

https://files.nyu.edu/ts43/public/math_courses.html

Math is the language of economics. If you are an NYU undergraduate, studying math will open doors to you in terms of interesting economics courses at NYU and job opportunities afterwards.

Major in Mathematics – Economics/Finance



Nobel Prize in Economics: Out of the 44 Laureates of the past 23 years,

20 have degrees in mathematics:

2015 Angus Deaton (Read math for two years)

2014 Jean Tirole (doctorat de troisieme cycle in decision mathematics)

2013 Lars Peter Hansen (BS in math)

2012 Alvin E. Roth (BS,MS,PhD in OR)

2012 Lloyd Shapley (BA, PhD in math)

2011 Christopher A. Sims (BA in math)

2010 Peter A. Diamond (BA in math)

2007 Eric S. Maskin (BS in math)

2005 Robert J. Aumann (BS, MS, PhD in math)

2004 Edward C. Prescott (BA in math, MS in OR)

2003 Clive W. J. Granger (BA in math)

2002 Daniel Kahneman (BA in math and psychology)

2001 Michael Spence (BA, MA in math)

2000 James J. Heckman (BA in math)

1998 Amartya Sen (BA minor in math)

1997 Robert C. Merton (BS, MS in applied math)

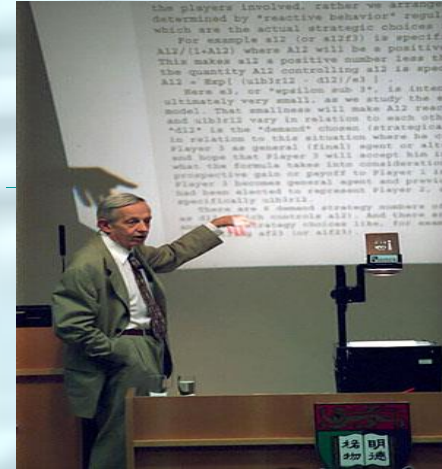
1996 James A. Mirrlees (MA in math)

1996 William Vickrey (BS in math)

1994 John F. Nash Jr. (PhD in math)

1994 Reinhard Selten (PhD in math)

1992 Gary S. Becker (BA in math)



MATH 3911 Game Theory and Strategy

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Luo Guannan and Jian Bo (both math major) are now doing a PhD in Economics at Northwestern University and University of Chicago respectively.

If you plan to do a master or PhD in economics or finance, the following courses are recommended:

MATH3401 Analysis I

MATH3901/3902 OR I and II

MATH3904 Introduction to Optimization

MATH3911 Game Theory and Strategy

MATH3906 Financial Calculus

MATH4907 Numerical Methods for Financial Calculus

STAT4601 Time-series Analysis

STAT6010 Advanced Probability

Many investment banks employ mathematicians to do risk management or computational finance



Dr. Lau Chi Fong (PhD in number theory)

Former Head of Market Risk Management, HSBC Global Markets

Computational/Quantitative Finance

- Usually need a PhD in Mathematics/Physics/Computer Sciences/Statistics to do quantitative finance in investment banks.
- Develop and analyze new financial products.
- Write programs to evaluate the price of financial derivatives.
- Mathematical modeling skill.
- Computing skills, e.g., Visual Basic.

Mathematics, Economics and Finance

Non-mathematics courses for students who are interested in economics and finance, and plan to take some professional examinations in related fields:

BUSI1002 Introduction to Accounting

ECON2210 Microeconomics Theory

ECON2220 Macroeconomics Theory

FINA2802 Investments and Portfolio Analysis

ECON0701 Introductory Econometrics



Students can prepare the level I examination of Chartered Financial Analyst by taking suitable courses in this category.

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Courses recommended for those are interested in computational finance

- **MATH3906 Financial Calculus**
- **MATH4907 Numerical Methods for Financial Calculus**
- MATH3603 Probability Theory
- MATH3601 Numerical Analysis
- MATH4602 Scientific Computing
- MATH4406 Introduction to PDEs
- STAT4601 Time-series Analysis
- STAT6010 Advanced Probability