

This is archived information. Please visit <http://www.maths.manchester.ac.uk> for current course unit information.

On-line course materials

MATH20912 - Introduction to Financial Mathematics

Year: 2 - Semester: 2 - Credit Rating: 10

Requisites

Prerequisites

MATH10121 or MATH10131, MATH10141 (or some familiarity with basic probability and statistics), MATH10222, MATH11222 or MATH10232

Aims

The course unit aims to enable students to acquire active knowledge and understanding of some basic concepts in financial mathematics including stochastic models for stocks and pricing of contingent claims.

Brief Description

This course is intended to serve as a basic introduction to financial mathematics. It gives a mathematical perspective on the valuation of financial instruments (futures, options, etc.) and their risk-management. The purpose of the course is to introduce students to the stochastic techniques employed in derivative pricing.

Learning Outcomes

On completion of this unit successful students will be able to price financial derivatives

Future topics requiring this course unit

Third level courses in financial mathematics.

Syllabus

1. Overview of basic concepts in securities markets.

2. Stochastic models for stock prices.
3. Hedging strategies and managing market risk using derivatives.
4. Binomial option pricing model.
5. Risk-neutral valuation, replication and pricing of contingent claims.
6. Black-Scholes analysis.
7. Interest rate models.

Teaching & Learning Process (Hours Allocated To)

Lectures	Tutorials/ Example Classes	Practical Work/ Laboratory	Private Study	Total
22	11	0	67	100

Assessment and Feedback

- Coursework; Weighting within unit 20%
- 2 hours end of semester examination; Weighting within unit 80%

Further Reading

- J. Hull, Options, Futures and Other Derivatives, 7th Edition, Prentice-Hall, 2008.
- P. Wilmott, S. Howison and J. Dewynne, The Mathematics of Financial Derivatives: A Student Introduction, Cambridge University Press, 1995

Staff Involved

Dr Paul Johnson - Lecturer

Data source is EPS system

Back To Top