Module title: Introduction to Stochastic Financial Mathematics
Abbreviation: 10-M-EFM-152-m01

Module coordinator: Dean of Studies in Mathematics
Module offered by: Institute of Mathematics

ECTS: 9
Method of grading: Numerical grade
Only after success completion of module(s)

Duration: 1 semester
Module level: Undergraduate
Other prerequisites: --

Contents:
Arbitrage and no-arbitrage, annuities and bonds, valuation of deterministic cash flows, actuarial present value, term structures and yield curves, forwards, payout profiles of options and other derivatives, fundamental theorem of asset pricing in the stochastic one-period model, risk neutral price measures, replication and completeness, stochastic multi-period models, valuation of European options in the binomial model, Black-Scholes formula.

Intended learning outcomes:
The student is acquainted with the fundamental concepts and methods of stochastic financial mathematics, can apply them to practical problems and knows about typical fields of application.

Courses:
V (4) + Ü (2)

Method of assessment:
(a) written examination (approx. 90 to 180 minutes, usually chosen) or (b) oral examination of one candidate each (15 to 30 minutes) or (c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate)
Language of assessment: German and/or English
Creditable for bonus: --

Allocation of places:
--

Additional information:
--

Referred to in LPO I (examination regulations for teaching-degree programmes):
--

Module appears in:
Bachelor's degree (1 major) Mathematics (2015)
Bachelor's degree (1 major) Economathematics (2015)
Bachelor's degree (1 major) Computational Mathematics (2015)
Bachelor's degree (1 major) Economathematics (2017)