## Module title
Introduction to Stochastic Financial Mathematics

### Abbreviation
10-M-EFM-122-m01

### Module coordinator
Dean of Studies Mathematik (Mathematics)

### Module offered by
Institute of Mathematics

### ECTS
9

### Method of grading
numerical grade

### Only after succ. compl. of module(s)
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### Duration
1 semester

### Module level
undergraduate

### Other prerequisites
Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.

## 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 derivates, 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 + Ü (no information on SWS (weekly contact hours) and course language available)

## Method of assessment
written examination (approx. 90 to 180 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes)

Language of assessment: German, English if agreed upon with the examiner

## Allocation of places
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## Additional information
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## Referred to in LPO I
(examination regulations for teaching-degree programmes)

## Module appears in
Bachelor' degree (1 major) Mathematics (2012)
Bachelor' degree (1 major) Mathematics (2013)
Bachelor' degree (1 major) Economathematics (2012)