## Module title

**Introduction to Stochastic Financial Mathematics**

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<th>Abbreviation</th>
<th>10-M-EFM-082-m01</th>
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### Module coordinator

Dean of Studies Mathematik (Mathematics)

### Module offered by

Institute of Mathematics

### ECTS Method of grading

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<th>8</th>
<th>numerical grade</th>
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### Duration Module level Other prerequisites

| 1 semester | undergraduate | -- |

### 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 minutes; usually chosen) or
- Oral examination of one candidate each (approx. 20 minutes) or
- Oral examination in groups (groups of 2, approx. 30 minutes)

### Allocation of places

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### Additional information

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### Referred to in LPO I

(examination regulations for teaching-degree programmes)

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### Module appears in

- Bachelor' degree (1 major) Economathematics (2009)
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