

<b>Module title</b>		<b>Abbreviation</b>
Stochastic Models for Risk Analysis		12-M-RA-102-m01
<b>Module coordinator</b>		<b>Module offered by</b>
Dean of the Faculty of Business Management and Economics		Faculty of Business Management and Economics
<b>ECTS</b>	<b>Method of grading</b>	<b>Only after succ. compl. of module(s)</b>
5	numerical grade	--
<b>Duration</b>	<b>Module level</b>	<b>Other prerequisites</b>
1 semester	graduate	--
<b>Contents</b>		
<p>Point and interval estimation for the value at risk Point and interval estimation for the conditional value at risk Prediction of value at risk in time series Risk of forecasts in time series, in particular exponential smoothing under covariates Conditional heteroscedasticity: ARCH, GARCH, EGARCH, DVEC, BEKK, DCC Aggregated losses and their empirical analysis Empirical analysis of statistical distributions Nonparametric bounds for the value at risk and conditional value at risk Empirical estimation of nonparametric bounds for value at risk and conditional value at risk Market model: definition, derivation, parameters, empirical analysis Capital asset pricing model: definition, parameters, empirical analysis Asset portfolios: definition, risk parameters Estimation of portfolio parameters: variance, value at risk, conditional value at risk, shortfall Optimum portfolios: concepts, theory, numerical analysis</p>		
<b>Intended learning outcomes</b>		
The student is able to estimate risk measures and the parameters of risk models from data. In particular, the student knows software packages and routines which enable empirical risk evaluation in a business context.		
<b>Courses</b> (type, number of weekly contact hours, language — if other than German)		
V + Ü (no information on SWS (weekly contact hours) and course language available)		
<b>Method of assessment</b> (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)		
written examination (approx. 60 minutes)		
<b>Allocation of places</b>		
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<b>Additional information</b>		
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<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)		
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<b>Module appears in</b>		
Master's degree (1 major) Business Management (2010)		