

mat810 - Quantitative Risk Management

Module label	Quantitative Risk Management			
Modulkürzel	mat810			
Credit points	9.0 KP			
Workload	270 h			
Verwendbarkeit des Moduls	• Master's Programme Mathematics (Master) > Mastermodule • Christiansen, Marcus (module responsibility) • May, Angelika (module responsibility) • Ruckdeschel, Peter (module responsibility)			
Zuständige Personen				
Prerequisites				
Skills to be acquired in this module				
Module contents	Students shall learn about fundamental mathematical concepts of modern risk management in the insurance industry. Fundamentals of ruin theory, risk measures, modelling of dependent risks, fundamentals of Asset-Liability-Management, performance measures, mathematical and legislative foundations of the Solvency II process, statistical Monte Carlo methods, stochastic internal business models, allocation principles of risk capital.			
Literatureempfehlungen	S. ASSMUSSEN (2000): Ruin Probabilities. World Scientific, Singapore R. DOFF (2007): Risk Management for Insurers. Risk Control, Economic Capital and Solvency II. RISK Books, London I. van LELYVELD (2006): Economic Capital Modelling. Concepts, Measurement and Implementation. RISK Books, London A.J. McNEIL, R. FREY, P. EMBRECHTS (2005): Quantitative Risk Management. Concepts, Techniques, Tools. Princeton Univ. Press, Princeton J. RANK (2007): Copulas. From Theory to Application in Finance. RISK Books, London R.Y. RUBINSTEIN, D.P. KROESE (2008): Simulation and the Monte Carlo Method. Wiley, Hoboken, N.J. A. SANDSTROM (2006): Solvency. Models, Assessment and Regulation. Chapman & Hall / CRC, Boca Raton.			
Links				
Languages of instruction	English , German			
Duration (semesters)	1 Semester			
Module frequency	im 2-Jahres-Zyklus			
Module capacity	unlimited			
Reference text	Studienschwerpunkt: C			
Type of module	Wahlpflicht / Elective			
Module level	MM (Mastermodul / Master module)			
Teaching/Learning method	Vorlesung + Übung			
Examination	Prüfungszeiten		Type of examination	
Final exam of module	in the first two weeks of the semester vacation		written or oral exam or solving of exercises	
Lehrveranstaltungsform	Comment	SWS	Frequency	Workload of compulsory attendance
Lecture		4	--	56
Exercises		2	--	28
Präsenzzeit Modul insgesamt				84 h