

Module	Continuous Time Finance		
Area of study/Profile	Quantitative methods, BWL		
Recommended semester	Second year	Mandatory/elective	Elective
Module coordinator	Prof. Dr. Lütkebohmert-Holtz,	Work load	80 hours
ECTS (credit points)	4	Contact hours (SWS)	1 (lecture/course) 1 (tutorial)
Course type	Lecture + Tutorial	Language	English
Requirements	Principles of Finance and Futures and Options		
Learning/ qualification target	Introduction to financial markets and to basic methods for the valuation and hedging of various financial derivatives		
Content	<p>The second revolution in mathematical finance following the Markowitz mean-variance theory of risk and return and the capital asset pricing model, concerns the option pricing theory of Black, Scholes and Merton from 1973 and the risk-neutral valuation theory that grew from it.</p> <p>This course provides a natural extension to the “Futures and Options” course which deals with the discrete valuation of derivatives. In this course we introduce financial models in continuous time and explain the basic principles of risk-neutral valuation of derivatives. Besides of futures and standard put and call options of European and American type a number of more sophisticated derivatives and exotic options are introduced as well.</p>		
Examination type	60 min. written examination at the end of the semester		
Literature	<p>Bingham, Kiesel “Risk-Neutral Valuation: Pricing and Hedging of Financial Derivatives.” 2nd ed., Springer Finance, 2004.</p> <p>Chance, Brooks “An Introduction to Derivatives and Risk Management.” 8th ed., South-Western, 2009.</p> <p>Hull “Options, Futures and Other Derivatives.” Prentice Hall, 2009.</p> <p>Shreve “Stochastic Calculus for Finance I: The Binomial Asset Pricing Model.” Springer Finance, 2005.</p> <p>Strong “Derivatives. An Introduction.” 2nd ed., South-Western, 2004.</p>		
Additional information & links	Course outlines, dates, and further information can be found on the webpage of the department: http://www.finance.uni-freiburg.de/		