Course Descriptions None 2020-2021

Course Title	Quantitative Techniques for Financial Economics
Course Code	EBC4097
ECTS Credits	6,5
Assessment	Whole/Half Grades

Period

Period	Start	End	Mon	Tue	Wed	Thu	Fri
1	31-8-2020	16-10-2020		X		L	X
4	1-2-2021	26-3-2021	X		L	X	

Level	Advanced
Coordinator	Nalan Bastürk, Etiënne Wijler For more information:n.basturk@maastrichtuniversity.nl; e.wijler@maastrichtuniversity.nl
Language of instruction	English
Goals	The objectives of the course are to provide student in the Financial Economics master programme with a solid knowledge of stochastic models and econometric techniques used in the analysis of financial markets. The students should be able to read and assess the current literature on stochastic models and econometric methods used in security pricing and empirical finance and to apply the acquired techniques in practice.
Description	PLEASE NOTE THAT THE INFORMATION ABOUT THE TEACHING AND ASSESSMENT METHOD(S) USED IN THIS COURSE IS WITH RESERVATION. THE INFORMATION PROVIDED HERE IS BASED ON THE COURSE SETUP PRIOR TO THE CORONAVIRUS CRISIS. AS A CONSEQUENCE OF THE CRISIS, COURSE COORDINATORS MAY BE FORCED TO CHANGE THE TEACHING AND ASSESSMENT METHODS USED. THE MOST UP-TO-DATE INFORMATION ABOUT THE TEACHING/ASSESSMENT METHOD(S) WILL BE AVAILABLE IN THE COURSE SYLLABUS. PLEASE NOTE THAT THE INFORMATION ABOUT THE TEACHING AND ASSESSMENT METHOD(S) USED IN THIS COURSE IS WITH RESERVATION. THE INFORMATION PROVIDED HERE IS BASED ON THE COURSE SETUP PRIOR TO THE CORONAVIRUS CRISIS. AS A CONSEQUENCE OF THE CRISIS, COURSE COORDINATORS MAY BE FORCED TO CHANGE THE TEACHING AND ASSESSMENT METHODS USED. THE MOST UP-TO-DATE INFORMATION ABOUT THE TEACHING/ASSESSMENT METHOD(S) WILL BE AVAILABLE IN THE COURSE SYLLABUS. The course consists of two parts. Part A focuses on advanced econometric techniques for modelling financial time series. Topics that are covered include volatility models. Empirical applications will provide students with practical experience in analysing financial time series. In part B, we cover and discuss the theoretical concepts and probability models underlying the pricing, construction, and hedging of (derivative) securities. Key concepts such as arbitrage pricing and risk-neutral valuation are introduced in a formal way and their implementation and use by market practitioners will be discussed.
Literature	Hull, J.C., Options, Futures and Other Derivatives, Prentice Hall, 8th edition, 2011 (or more recent edition). Other literature will be provided or listed on the course webpage.
Prerequisites	Solid background in finance and in statistics/econometrics (on the level of a quantitatively oriented economics/finance bachelor). Required concepts from mathematics/statistics are a.o. random variables, probability distributions, statistical tests, regression analysis, ordinary and partil derivatives, exponential function. Basic knowledge in programming (e.g. in R, MATLAB, or VBA) is suggested (introductory material for R will be provided on the course webpage before the start of the course). An advanced level of English.
Teaching methods	PBL / Presentation / Lecture / Assignment
Assessment methods	Participation / Written Exam
Evaluation in previous academic year	For the complete evaluation of this course please click http://iwio-sbe.maastrichtuniversity.nl/rapporten.asp?referrer=codeUM

This course belongs to the following programme / specialisation

Master Financial Economics - Asset Pricing	Compulsory Course(s)
Master Financial Economics - Banking	Compulsory Course(s)
Master Financial Economics - Financial Analysis	Compulsory Course(s)
Master Financial Economics - No specialisation	Compulsory Course(s)
SBE Exchange Master	Master Exchange Courses
SBE Non Degree Courses	Master Courses